Negation, Quantification and Scope.
A Corpus Study of English and German
All…Not Constructions

Thesis
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For Benjamin, Margaretha and Salome

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Preface and acknowledgments

Writing the acknowledgments section is maybe the hardest part of the whole PhD enterprise. Firstly, there is the worry you might forget thanking somebody. Secondly, tackling the acknowledgments means you have finally come to the hard, though maybe not really whole-hearted, decision of letting go and presenting the text to the world, in the uneasy knowledge that you could go on forever improving the work, including additional secondary literature or new serendipitous examples, refining language and style, and question old assumptions and explanations. On the other hand, it is often hard to work on one and the same topic for such a long time, struggling with trying to understand other researchers' thoughts or putting one's own in order, and it is also hard for other people to imagine how on earth one can spend so much time writing so many pages on such a (seemingly) narrow topic.

While working on this project, I have come to realize that at least as far as linguistics is concerned, and despite being a firm believer in quantitative methodology, detailed qualitative analysis is very important and can lead to insights otherwise easily overlooked. A PhD project is one of the rare opportunities, if not the only one, to spend so much time and effort on a particular topic and allowing the researcher to look into matters in such depth. It is therefore at the same time a great privilege to be able to devote one's time to such an enterprise as well as a gift to science of time and intellectual effort. However, in order not to end up with a solipsistic exercise, at some point one has to come to a conclusion and share the work with the research community, or even better, the interested public at large. For this reason, I have decided to publish the present work electronically and open-access, and I hope that in this way it will find many interested readers and maybe even spark further studies in the same or related areas.

I would like to thank all those who have offered their generous support during this long and exciting process. I would probably not have considered studying quantifier-negation constructions in the first place, had I not attended an interesting lecture on negation taught by Gunnel Tottie. This was in my third semester at university – and by then Gunnel had also taught me the basics of (English) linguistics. Apart from inspiring my continuing interest in the subject she has always been very supportive both on a professional and a personal level and she readily agreed to co-supervise the project when I first presented it to her. The same can be said of Marianne Hundt; I am very grateful for the opportunity to work with her as a teaching and research assistant, and for her supervision of my dissertation. Marianne gave me valuable advice, constructive feedback, encouragement and at times the necessary pressure to finish.

Further, I am grateful to Sebastian Hoffmann and Gerold Schneider for help with the extraction of data from the BNC and the WaCky material, respectively, and to Roland Lerch for solving various IT troubles I encountered over the years. David Denison took the time to give me useful feedback on earlier versions of chapters 4.5 and 4.6, and numerous other people commented on ideas, analyses, and early drafts at various conferences and at the English department of the University of Zurich. I would also like to thank Philippa Cook, who provided me with a useful article, Yuping Zhou, whose 2008 dissertation is not publicly available and who freely sent it to me, and the "WaCky people" for letting me work with their material.

Special thanks go to Martin Mühlheim, who has been a constant and faithful companion and friend throughout our studies from the very first day at university, and who has proofread most of my papers, including the present work. I am also grateful to everyone who (unwittingly) served as producer of relevant data, including my husband and children.

My biggest thanks go to my family, who has made it possible for me to successfully finish this enterprise both despite and thanks to it growing continually. My mother gave her time freely to babysit whenever necessary. And I am forever very grateful to my husband Thomas for just being there, for listening and for discussing linguistic conundrums with me, for doing a big - at times disproportionate – share of everything else that needed to be done, and for his constant love and encouragement.

Thank you all!

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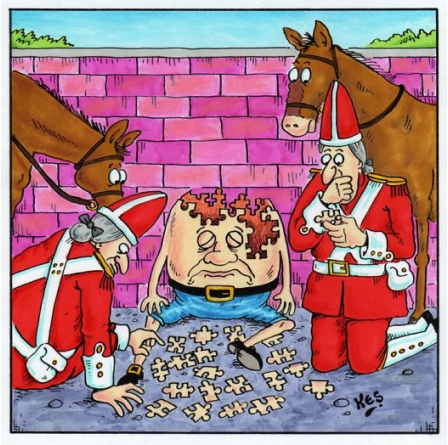
1 Introduction

> Negation in language has, in addition to its strictly logical aspect,
> a huge PRAGMATIC component that cannot be predicted from the logic.
>
> (Givón 1978: 109)



Humpty Dumpty sat on a wall,
Humpty Dumpty had a great fall.
All the king's horses and all the king's men,
Couldn't put Humpty together again.

Cartoon by Kevin 'KES' Smith (<http://the-cartoon-fiend.blogspot.com/2006/04/friends-of-fiend-7-kevin-kes-smith.html>, accessed 7 September 2006).

The Humpty Dumpty nursery rhyme nicely illustrates the topic of the present work, which deals with *all…not* sentences, their meanings and their use in British English and in German. Just as there are many theories on the origins of the rhyme, there is also a great deal of controversy concerning quantifier-negation interaction.[1] As Horn (1989: 483) points out, "the scope interaction of the negative operator with quantified subjects and with descriptions" is "one of the most extensively studied and least-understood phenomena within the semantics of negation". Although the phenomenon of scope ambiguity between quantifiers and negation has been studied extensively by logicians and linguists alike, many issues related to quantifier-negation interaction remain controversial. While traditional logicians often deny the very existence of ambiguity, many (theoretical) linguists do not agree on the existence, (un)markedness and derivation of certain readings, or the availability of these readings to all speakers of the language.

The comparative corpus linguistic approach of the present study is aimed at shedding new light on this old topic by quantitatively and qualitatively analysing sentences that are attested in natural written (and spoken) English and German.[2] Such a strictly empirical and descriptive approach is necessary because the bulk of previous research rests on introspection or on the use of constructed examples, used either out of context or in an artificial laboratory setting. While it may not be possible to solve all theoretical questions empirically,

[1] This phenomenon is also referred to by other terms, for instance scope ambiguity or scope inversion.
[2] The Humpty Dumpty sentence, for instance, in fact occurs twice in the British National Corpus.

it is certainly true that any theoretical model should be firmly grounded in descriptive adequacy, which is often not the case with purely introspective methodology. The major aim of the present study is thus an accurate description of the linguistic facts as evidenced in the available corpus data. The methodology is data-driven, so all the hypotheses and conclusions presented are based on strictly empirical observation, and all arguments will generally be supported with natural examples. It is thus hoped that all readers taking the time to read this work will not be left as perplexed as all the king's horses and all the king's men in the cartoon above.

The perplexity to be avoided here is often engendered not only by the complexity of the topic itself, but also by the imprecise use of terminology. Either the same term is used in various different or overlapping senses, or the same phenomenon is referred to by a number of different terms. For instance, the term SENTENCE NEGATION can be defined on the basis of purely syntactic criteria, or it can be used in a semantic sense. Unsurprisingly, things become confusing when the definitions are not made explicit or the terms are used inconsistently. In this study, the constructions investigated are selected on a purely syntactic basis. As far as English is concerned, the relevant sentences are of the type *all* (NP) V *not* (with the universal quantifier *all* in clause-initial subject position and the negator *not*, including the contracted form *n't*,[3] following the finite verb), as exemplified in sentence (1)a.[4] Such *ALL…NOT* CONSTRUCTIONS can be interpreted in two distinct ways, depending on whether negation has wide or narrow scope with respect to the quantifier. The wide scope reading of (1)a is paraphrased in (1)b and the narrow scope reading in (1)c.

(1) a. All the bills don't amount to $50.

b. Not all the bills amount to $50. — NEG-Q wide scope negation weak distributive reading

c. Not one of the bills amounts to $50. — NEG-V narrow scope negation strong distributive reading

[3] Horn (1989: 482 and 490) assumes that the NEG-V reading exists only with uncontracted *not*. However, this is not true and Horn (1989: 490-491) later on admits that speakers get NEG-V readings also with contracted *not*.

[4] Sentences (1a-d) are quoted from Taglicht (ND: 1).

Adopting Carden's terminology (1970a, 1973a, 1973b, 1976),[5] I will refer to the wide scope reading as the NEG-Q reading (negation has wide scope over the quantifier) and the narrow scope reading as the NEG-V reading (negation scopes only over the verb, not over the quantifier). Traditional logicians (such as Ladyman 1999 and Lepore 2000; cf. section 2.3) only allow for the NEG-V reading and hold that the NEG-Q reading is illogical.

As if all this were not complicated enough, there is even a third alternative, called the collective reading (COLL). A paraphrase of the COLL reading of sentence (1)a is given in (1)d.

(1) d. The sum of all the bills does not amount to $50. COLL collective

While the distinction between the NEG-Q and the NEG-V reading depends on the relative scope of the quantifier and negation, the difference between the NEG-Q and NEG-V readings on the one hand, and the COLL reading on the other is due to the status of *all* as distributive or collective. In (1)b and (1)c, something is said about every one of the bills (distributive use), but in (1)d, the bills are referred to as "a totality or a set taken as a unit" (Stebbing 1948: 54, quoted in Taglicht ND: 2; collective use). The COLL reading is (usually) the strongest of the three, since it implies the NEG-V reading (or strong distributive reading), which in turn is stronger than the NEG-Q reading (or weak distributive reading, sometimes also referred to as partial negation; *all together do not amount to 50$ > not one amounts to 50$ > not all amount to 50$*).

The same potentially ambiguous construction also exists in German, exemplified in (2)a.[6] The basic structure of the parallel German construction is *alle* (NP) V *nicht*, exhibiting the same structure as English *all…not* constructions. But since word order in German is much less restricted than in English, variations on this basic structure can be found. For instance the constraint on clause-initial position does not restrict the NP containing the quantifier to subject function, as it does for English. In German, pre-verbal constituents

[5] I chose to adopt Carden's terminology despite the methodological problems associated with his studies, which will be discussed in section 2.5, because these labels have subsequently often been used by other authors as well and many readers can be assumed to be familiar with them. The different scope possibilities might be made even clearer by adopting a notation like Q>N for NEG-V and N>Q or Q<N for NEG-Q. As will be shown in chapter 4.6, the situation is even more complicated because there are different types of NEG-Q readings. For the moment, however, the accustomed labels serve their purpose and I therefore refrain from introducing new ones.

[6] In the corpus examples, the quantifier and negator are generally marked with italics, and the information in square brackets lists the corpus, in case of the BNC together with the relevant text-ID and sentence number, and the reading. All corpus examples are written, unless stated otherwise.

containing *alle* can more easily fulfil non-subject function, such as direct object or adverbial PP, as illustrated in (2)b and (2)d respectively.

(2) a. Aber *alle* Geister ließen sich diesen Massenmord *nicht* gefallen. [C4; NEG-Q][7]

b. … und *alles* kann auch die Alternative Liste *nicht* leisten, weil sie zu wenig Geld hat. [C4: 991; NEG-Q]

c. *Alles* was wir dem Kind beibringen, kann es *nicht* mehr selber lernen! [C4; NEG-V]

d. Mit *allen* unseren Künsten können wir *nicht* hindern, daß sich der Kampfesmut aufs neue in den Männern staut. [C4; COLL]

As the finite verb has to appear between the quantified NP and negation for the structures to be potentially ambiguous, this condition was kept for German, even though some English *all…not* constructions would show different word order when translated into German (for instance, the finite verb is moved to the end of the sentence in certain types of subclause; cf. example (16)b in chapter 3.4). All three readings occur in German as well as in English, irrespective of the function of the constituent containing the quantifier *alle*. The NEG-Q reading is illustrasted in (2)a and b, the NEG-V reading in (2)c and the COLL reading in (2)d. These are all attested examples from the corpus C4 (cf. section 3.2.2 on German material).

To enable detailed quantitative as well as qualitative analysis, the study is limited to the constructions described above. The constructions are restricted to the quantifier *all*/*alle* even though the phenomenon also occurs with other universal quantifiers such as *every* and *jede/r/s*.[8] Moreover, I did not consider cases where negation precedes the quantifier (such as *It does not explain all the peculiar initial conditions of the big bang* [ABD:2771]), since their potential for ambiguity is debated. The only negator considered in this study is *not*, and for German *nicht*; other negators like *never*, *no* or *kein* were excluded. Constructions like *All the boys had no money* are not ambiguous, although cases of split scope are attested for German (for instance, *Jeder Arzt hat kein Auto* [quoted from Abels and Martí 2010] can be interpreted as 'Not every doctor has a car'; cf. section 2.1.2 and section 4.5, example (36)c).

Although quantifiers as well as negation have received much attention in the literature, *all…not* constructions and their interpretations are often ignored completely or merely mentioned as exceptional cases that can simply be explained away. The studies that are concerned with the issue are often purely theoretical and based on logic. However, as

[7] C4 refers to the Korpus C4, a German corpus that will be introduced in chapter 3.2. A list of symbols abbreviations can be found in the Appendix.

[8] According to Biber et al. (1999: 278, Table 4.15), *all* is the most frequent quantifier in all registers.

Taglicht (1984: 119) rightly insists, "the semantics of English (or any natural language) cannot be identified with logic." As the basis of theoretical semantics is found in logic, semantic approaches to the issue usually do not take into account pragmatic factors, which always play a decisive role in real language use.

This study is an attempt at developing a more comprehensive picture of *all…not* constructions by looking at the occurrence of sentences like (1a) in real language data. As Taglicht (1984: 139, note 20) notes, "only a thorough study of utterances in context could do justice to the complexity of this aspect of language use." The corpus linguistic approach for the first time enables an objective quantification of the various readings, while an additional qualitative analysis can uncover structural as well as pragmatic factors influencing the use and interpretation of the constructions in question. Furthermore, a comparative description of *all…not* constructions enables me to pinpoint the crosslinguistic similarities and differences between English and German.

Before presenting my material and results, I will provide a detailed overview of previous research in order to illustrate the complex issues raised by such constructions, and to enable the comparison to my own results, which either corroborate or undermine previous findings. This previous research and theoretical background is presented in chapter 2, while chapter 3 is devoted to the presentation of the data, analysis and (quantitative) results of my corpus study. Chapter 4 deals with disambiguating factors uncovered through close qualitative analysis of the data. These disambiguating factors are located on various linguistic levels: lexical/semantic, structural and pragmatic. An information-structural account of disambiguation will be presented in section 4.5, while section 4.6 is concerned with the role played by so-called metalinguistic negation. Section 4.7 deals with the fuzzy border between the information-structural and the metalinguistic approach, with a summary of the most important points presented in section 4.8. Metalinguistic negation and an alternative impersonal construction for its expression in German are dealt with in section 4.9. In chapter 5, I will consider the most typical functions of *all…not* constructions and address an issue ignored in previous research: the question why *all…not* constructions exist in the first place, given the availability of unambiguous and (allegedly) unmarked paraphrases for the various readings. A summary of the most important results and conclusions is presented in chapter 6, together with suggestions for further research.

2 Theoretical background: Review and discussion of previous work

This chapter aims at giving a fairly comprehensive overview of the previous literature dealing with scope phenomena of quantifiers and negation without, however, making any claims of being complete. *All…not* constructions have been discussed by philosophers, logicians and linguists of various persuasions – at times merely in passing, but at other times as an object of more detailed study. Philosophers, logicians and linguists were all concerned with the problem of (illogical natural language) scope, followed by formal semanticists as well as transformational/generative grammarians. The problem has sometimes also been dealt with by more empirically-minded linguists. There are those coming to the problem via their treatment of negation and others who are concerned mainly with quantifiers, or with different types of scope relations. Some researchers have a seemingly unrelated agenda (e.g. the role of certain intonation contours) and only mention the topic in question as one example among many, yet sometimes this proves very valuable because it offers a totally new perspective on the phenomenon under study. I will first turn to a survey of literature on negation, quantifiers and scope in general, before reviewing material directly concerned with quantifier-negation constructions. This material includes standard grammars and usage guides, literature with a focus on logic or semantics and pragmatics, observations by philologists, generative studies, corpus linguistics, literature dealing with information structure and prosody, and psycholinguistic studies (in particular concering first language acquisition). The survey closes with a list of studies on quantifier-negation interaction in other languages.

2.1 Selective survey of previous work

2.1.1 Negation in general

In this section, my original aim was to give an overview of the most important literature concerned with various issues related to negation. This aim, however, very soon turned out to be hopelessly unfeasible. The literature on negation is so diverse and vast that it is impossible to do it justice in such a brief overview. Topics that are important in negation studies include the question of what types of negation should be distinguished (for instance sentence versus constituent negation; *no*-negation, *not*-negation and affixal negation), the question whether negativity is a gradient or fuzzy phenomenon, negative polarity items, multiple negation, negative raising, the historical development of negation and the

grammaticalization of negative markers (Jespersen's cycle), the cognitive status of negative sentences, or children's acquisition of negation, to name just a few.

It is probably fair to say that the most important general work on the phenomenon of negation is Horn (1989). Although it can be daunting in its complexity, it still has to be recommended as the first starting point for any research on negation. Other works on negation in general or on English negation in particular, include the following, most of which were consulted at some point during the research resulting in the present work (listed in the order of their publication): Jespersen (1966 [1917]), Klima (1964), Jackendoff (1969), Atlas (1977, 1980), Givón (1978), Dahl (1979), Payne (1985), Tottie (1991), Croft (1991), Jacobs (1991), Jordan (1998), Mazzon (2004), Eggs (2008), De Swart (2010). Works on negation in German (and English) include the following: Weiß (1961a, b), Zemb (1979), Helbig (1970), Fichtner (1982), Jacobs (1982), Lieb (1983), Nussbaumer and Sitta (1986), Strecker (2007). Other works on more specific topics, such as metalinguistic negation, will be cited in the relevant sections.

2.1.2 Quantifiers, negation and scope

The same problem that is created by the unmanagable quantities of material on negation also applies to quantifiers and scope phenomena (the classic example being scope ambiguity in sentences with two or more quantifiers, such as *Everybody loves somebody*). Quantifiers and scope phenomena have been researched extensively by semanticists, but also by other linguists, logicians and philosophers. What follows is a selection of seminal titles or ones that are fairly closely related to the present study (again in order of publication): Anderson (1973; a generative treatment of quantifiers), Hogg (1977; on English quantifiers), Kroch (1979; on the semantics of scope), Barwise and Cooper (1981; the theory of Generalised Quantifiers), Gil (1982; on the scope of two quantifiers in Dutch, Hebrew and Bengali), Lerner and Sternefeld (1984; on the scope of negation), Sgall et al. (1986; on the semantics and pragmatics of negation, its scope and related matters), Hamm (1989; on the semantics of quantifiers), Kurtzman and MacDonald (1993; psycholinguistic experiments on the resolution of quantifier scope ambiguities), Partee (1970 and 1993; on negation, quantifiers and scope), Hoeksema (1996; on floating quantifiers), Peters and Westerståhl (2006; on quantifiers), Sudhoff (2008; on the scope of negation and focus particles in German), Geurts (2003; on children's interpretation of universally quantified sentences), van der Auwera and Neuckermans (2004; on the special Flemish triple negation construction *en niemand niet*, which is synonymous with the negative quantifier

nobody, literally 'not nobody not'), Błaszczak and Gärtner (2005; a minimalist treatment of the scope of negative quantifiers in English and German), Cook and Payne (2006; on the connection of quantifier scope and information structure in German), Bonnefon et al. (2009; on the pragmatics of the scalar implicature from *some* to *not all*) and Abels and Martí (2010; on the split scope readings of certain quantifiers). Again, rather than providing a full overview of the potentially relevant literature, this list rather serves to indicate the diversity of the available material.

2.2 Standard grammars and usage guides on quantifier-negation constructions

Despite the magnitude and diversity of material on negation as well as quantifiers, *all…not* constructions and their interpretations are often ignored completely or merely mentioned as exceptional cases. And yet, as these constructions are a rather infrequent phenomenon (cf. chapter 3.4), the considerable amount of specialised literature on the topic should probably come as a greater surprise than the comparative lack of references in more comprehensive works, such as grammars. In Biber et al. (1999), for instance, *all…not* constructions are not mentioned, probably because they are so rare. By contrast, they do feature, albeit only briefly, in the other two standard grammars by Quirk et al. (1985) and Huddleston and Pullum (2002). Quirk et al. (1985: 790) state that intonation is crucial for disambiguation of *all…not* constructions and that they are unusual in the NEG-V sense because this meaning is usually expressed with *no*/*none*. Huddleston and Pullum (2002: 795) give an example of an *every…not* sentence and agree with Quirk et al. when they observe that "the intonation can assist in making the meaning clear: the reading with wide scope negation reading [sic] will typically be encouraged by high pitch on *EVerybody*." Similarly, Huddleston and Pullum (2002: 796) also remark that "wide scope universal and narrow scope existential quantification" (*all…not* and *none*, respectively) can be equivalent, but that *none* is "quite strongly preferred". This is reflected in the fact that an *all…not* construction "allows a prosodic override of the narrow scope negation reading much more readily than" (Huddleston and Pullum 2002: 796) a sentence with *many…not* because a paraphrase with *none* "would be preferred over the narrow scope negation reading" of an *all…not* sentence.

When it comes to prescriptive grammars and usage guides, their condemnation of the NEG-Q reading is mentioned by several authors. For instance, Russel (1934: 115) defends "the legitimacy of such an expression as *All students are not industrious*, for which grammar prescribes *Not all students are industrious*." Russel's formulation suggests that

this prescription of "grammar" was well-known among his contemporaries, so that there is no need to mention a specific grammar book. However, the objection to the NEG-Q reading on logical grounds seems to have sprung up no earlier than the nineteenth century. Leonard (1929: 98) notes that "[a]bout placing *not*, the eighteenth century was quite free of formula" and goes on to cite three examples of *all…not* and *every…not* constructions by eighteenth century grammarians, all of them in the NEG-Q sense. Leonard (1929: 98) affirms that "[t]hese forms were not objected to, and seem perfectly clear." Indeed, I did not find any references to quantifier-negative constructions in Bishop Lowth's grammar (1762), probably the most famous of the eighteenth century prescriptive grammars, nor in other earlier and later grammars (Lily 1549, Poole 1646, Johnson 1706, Dilworth 1751, Ward 1765, Webster 1784). But even in the nineteenth century, authors can be found who at least implicitly take the NEG-Q reading for granted. Fowler (1851: 443) even dismisses the NEG-V reading in the following excerpt:

> *Some Islands are fertile*; *All tyrants are not assassinated*, are Particular propositions. The words *all*, *every*, as in the last example, when prefixed to Negative propositions, are not to be considered as signs of universality. For *all tyrants are not assassinated* is equivalent to *some tyrants are not assassinated*. This last is evidently a Particular and not a Universal proposition.

We will see in the next chapter 2.3 that these statements are wrong according to traditional logic, where *All tyrants are not assassinated* would be classified as a universal negation, rather than a particular proposition. By arguing that the two statements *All tyrants are not assassinated* and *Some tyrants are not assassinated* are equivalent, Fowler clearly shows that he interprets the *all…not* construction in the NEG-Q sense. Accordingly, his example of a particular negative is *All kings are not assassinated* (Fowler 1851: 444)), rather than *Not all kings are assassinated* or *Some kings are not assassinated* (cf. the Square of Oppositions presented in chapter 2.3).

A different Fowler (1926: 383), on the other hand, in one of the best known prescriptive usage guides, criticises NEG-Q *all…not* constructions by calling their use one of "the comfortable old slovenries". But the construction is not proscribed altogether, even though this "would save a great deal of ambiguity" (Fowler 1926: 382). It is in fact recognised as being "like many other inaccuracies, the natural & idiomatic English" (383). Nevertheless, Fowler's stance towards the NEG-Q reading is condescendingly critical. He believes that the problem of this illogical construction will disappear in time because the language and/or its users will develop to become more logical. The correspondent who complained about the construction "has logic on his side, logic has time on its side,

& probably the only thing needed for his gratification is that he should live long enough" (Fowler 1926: 383). Unfortunately, the poor correspondent will hardly have lived to see the disappearance of the construction, which is still alive and kicking almost a hundred years after the first publication of Fowler's guide.

A similar guide, Krapp (1928: 32) only mentions the proverb *all is not gold that glitters* and calls it "a trite phrase, of proverbial origin and current in various literary forms", but has nothing to say about *all…not* constructions in general. Later usage guides are (even) more lax in their treatment of the supposedly illogical NEG-Q construction. One of the more recent ones, Peters (2004: 379), does not condemn the NEG-Q reading and only mentions that,

> [d]epending on its position in the sentence, **not** may create ambiguity. For example: *All men are certainly not equal*. Does this mean that "all men are unequal," or that "not all men are equal?" The question turns on which part of the sentence is covered by the negative – or what its *scope* is.

Bryant (1962: 148) is only slightly more critical when she calls the article relevant to our discussion "*not*, illogically placed"; however, she affirms that "[t]he *all…not* expression, as in '*All* men are *not* alike,' is standard English." While Bryant (1962: 148) mentions "the logical argument for '*Not all men are alike*,'" she defends *all…not* by referring to its "long and reputable history, dating back to Hamlet's 'All is not well.'" In the same article, the placement of *not* in *all…not* constructions is equated with examples like "'The building of dykes and fill is *not* considered practical by many…'" and cases of neg-raising. A note of disapproval can, however, be detected in the conclusion that "[w]riters of formal English prefer to place the modifier *not* logically, whereas most speakers determine its position by content rather than by logic."[1]

The condemnation, or at least gentle mocking, of the NEG-Q reading is not restricted to the nineteenth and early twentieth century. Recent examples can be found, for instance, in Brians (2008). In the web entry on *not*, Brians very briefly but decidedly cautions that "[y]ou need to put 'not' in the right spot in a sentence to make it say what you intend. 'Not all fraternity members are drunks' means some are, but 'All fraternity members are not drunks' means none of them is." The relative scope of quantifiers and negation seems to become an issue time and again, as can also be seen in the example of James J. Kilpatrick's attack on the newspaper headline *Mass Transit not an Option for all Drivers* and the

[1] Incidentally, this remark is quite amusing in light of the common semanticist's position to equate semantic structure and logical structure. Differences between speech and writing in the use of *all…not* constructions will be discussed in chapter 3.4.6.

numerous reactions to this column by Mark Liberman (29 July 2006, 11 December 2007, 14 December 2007) and others on *Language Log*, as well as Neal Whitman (22 August 2004, 21 July 2006), Arnold Zwicky (25 October 2009), and Jan Freeman (28 October 2007) in *The Boston Globe*. The outraged rejoinders show that such linguistic issues can cut some people to the bone and quickly lead to surprisingly personal attacks (cf. Liberman, 11 December 2007). It seems then that the potential for ambiguity and the 'illogicality' of the NEG-Q reading will continue to invite prescriptivist condemnations and worried comments from scrupulous members of the public.

As far as German grammars are concerned, in most of them hardly any information can be found on scope interactions between quantifiers and negation. Helbig and Buscha (2001: 548), in the context of distinguishing between "Satznegation" (sentence negation) and "Sondernegation" (constituent negation) interpret *Alle Studenten waren nicht verheiratet* in the NEG-V sense, at least with neutral accent. They admit that with stress on a particular word or syllable, the reading can change to what they then call constituent negation ("**A**lle Studenten waren ***ni**cht* verheiratet."). Engel (2004) says nothing about *all…not* constructions, but mentions the possibility of moving the negated element to the prefield, either together with the negator or on its own. He notes that in this case the element in the prefield is "thematically emphasised, either by means of uncommon position (e.g. direct object in the prefield) or by means of phonic marking"[2] (Engel 2004: 449). There is, however, no mention of the possibility of this element being a quantifier. Similarly, Weinrich (2005: 868) only mentions "that, when accompanied by another linguistic element which it refers to, *not* can also be placed in the prefield (and the postfield) of the verbal brace."[3] The well-known *Duden* grammar (2006) is the only one treating the scope and focus of negation explicitly, and the following general rule is postulated: "The negation particle *nicht* is placed at the left edge of its focus" (923).[4] According to this rule, the NEG-Q sense would have to be expressed by *nicht alle* rather than by *alle…nicht*.

The most detailed information on quantifiers and negation can be found in Zifonun et al. (1997). At first it seems that they only recognise the NEG-V reading. For instance, in the section dealing with *kein* 'no/none', they claim that from the sentence *In einem Pueblo*

[2] The original reads "thematisch vorgehoben, entweder durch ungewöhnliche Stellung (z.B. Akkusativergänzung im Vorfeld) oder durch phonische Markierung" (this, as well as all following translations from German are my own).

[3] Original: "daß *nicht* in der Begleitung eines anderen Sprachzeichens, auf das es sich bezieht, durchaus auch im Vorfeld (und im Nachfeld) der Verbalklammer stehen kann."

[4] Original: "Die Negationspartikel *nicht* steht am linken Rand ihres Fokus."

wohnt ***kein Prärieindianer*** follow the two sentences ***Alle Prärieindianer*** *wohnen nicht in einem Pueblo* and ***Jeder Prärieindianer*** *wohnt nicht in einem Pueblo*, according to the law of predicate logic $\neg\exists x[F(x)] \Leftrightarrow \forall x[\neg F(x)]$ (Zifonun et al. 1997: 1965). Although this is true, they do not mention the fact that *Alle Prärieindianer wohnen nicht in einem Pueblo* can also be interpreted with wide scope negation. In their section on negation and quantification, they mention that for sentences with quantifiers there are systematically two ways of negating, as in *Alle Kinder essen* ***nicht*** *gern Spinat* and ***Nicht*** *alle Kinder essen gern Spinat*. The paraphrase they commonly employ to determine the scope of operators yields the same sentence for both versions of negation: *Es trifft* ***nicht*** *zu, daß alle Kinder gern Spinat essen*. "The mechanic transformation thus blurs the distinction between (1a) and (1b)"[5] (Zifonun et al. 1997: 858). They claim that the paraphrase represents adequately only the scope of *Nicht alle Kinder essen gern Spinat*, that is wide scope negation. The paraphrase is compatible with *Alle Kinder essen nicht gern Spinat* in the sense that the former must be true in case the latter is true, but not vice versa. Again, this clearly shows that Zifonun et al. (1997) interpret *alle…nicht* sentences only in the NEG-V sense. "Only the negation in [*Nicht alle Kinder essen gern Spinat*] has wider scope than the quantification"[6] (Zifonun et al. 1997: 858). However, later on they briefly mention that "focussing the quantification when the negative expression is non-adjacent can result in scope reversal"[7] (Zifonun et al. 1997: 859), as in their example *Alle Kinder trinken* ***nicht*** *gern Pfefferminztee*. In short, then, the standard grammars both of English and of German leave several important questions unanswered, not least how the allegedly illogical wide scope negation reading can be derived without prosodic clues.

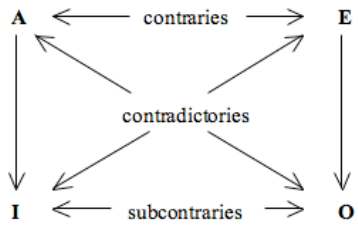
2.3 Philosophy, logic, semantics and pragmatics

Questions regarding quantification and negation have not only puzzled modern grammarians, for as early as in Ancient Greece philosophers considered the relations between these two operations. A brief overview of their contributions can be found in de Haan (1997: chapter 2.1) and a much more extensive discussion in Horn (1989). The Greek philosophers (in particular Aristotle) formulated important laws such as the LAW OF

[5] Original: "Die mechanische Umformung verwischt also den Unterschied zwischen (1a) und (1b)".
[6] Original: "Nur die Negation in [*Nicht alle Kinder essen gern Spinat*] hat weiteren Skopus als die Quantifikation."
[7] Original: "Durch Fokussierung der Quantifikation kann es bei nicht-adjazenter Stellung des Negationsausdrucks zu einer Umkehrung der Skopusverhältnisse kommen".

CONTRADICTION (LC) or the LAW OF THE EXCLUDED MIDDLE (LEM)[8] and already distinguished between contrary and contradictory negation. This opposition was later placed in the so-called Square of Oppositions[9] (which, according to Horn [1989: 10] was first employed by Apuleius and Boethius) and is shown in (1).

(1)



A: universal affirmation (*all*)
E: universal negation (*no*, *none, all…not*)
I: particular affirmation (*some*)
O: particular negation (*not all*, *some…not*)

The **A** and **E** corners are contraries and cannot both be true at the same time, the **A** and **O** corners and the **E** and **I** corners, respectively, are contradictories and cannot be true or false at the same time, while **I** and **O** are subcontraries and cannot be simultaneously false. **I** is the subaltern of **A** and **O** the subaltern of **E**, which means that **I** is unilaterally entailed by **A** and **O** is unilaterally entailed by **E**. The inner negation[10] of a quantifier expressing the **A** corner (i.e. **A~**) results in a universal negation (**E** corner). This is illustrated by examples (2)a-c, where (2)b, the inner negation of the universal quantifier *all* (**A** corner), is equivalent to its contrary, the negative universal quantifier *no*/*none* (**E** corner).

(2) a. All the boys left. **A**
b. All the boys didn't leave. **A~** ≈
c. None of the boys left. **E**

On the other hand, the inner negation of a quantifier expressing the **I** corner (i.e. **I~**) results in a particular negation (**O** corner). Again, this is illustrated by the equivalence of (3)b and (3)c. Interestingly, there is no lexicalised quantifier in English expressing the **O** corner, so that **O** always has to be paraphrased by **I~** or **~A**.

According to this system, *all…not* sentences as examples of **A~** should not pose any problems at all. It should be clear that in sentence (2)b, the inner negation of a universal

[8] Aristotle formulates LC as "it is impossible to be and not be at the same time" and LEM as "in every case we must either affirm or deny", or in modern notation: '**~(p** ∧ **~p)**' [LC_{prop}] and '**p** ∨ **~p**' [LEM_{prop}] (according to Horn 1989: 18-20).

[9] The letters in the Square of Oppositions derive from the Latin verbs ***affirmo*** 'I affirm' and ***nego*** 'I deny' (Horn 1989: 10).

[10] The inner negation of a quantifier Q is represented by Q~, while ~Q is called its outer negation. The outer negation of Q is its contradictory, while the inner negation of Q is its (sub)contrary (Westerståhl ND: 5).

affirmation (**A** corner) results in a universal negation (**E** corner). In my terminology, this is called the NEG-V reading and, as we have seen, it can indeed be paraphrased by (2)c.
As was mentioned in the introduction, however, the scope relations in natural language are not as straightforward as this, since the negation in (2)b can also have wide scope over the quantifier (*Not all the boys left*). This NEG-Q reading corresponds to the **O** corner rather than the **E** corner of the Square of Oppositions (the outer, rather than the inner negation of **A**, i.e. (3)c rather than (2)c). This logically 'unlawful' equivalence is symbolised by the crossed-out arrow in (4).

(3) a. Some of the boys left. **I**
b. Some of the boys didn't leave. **I~/O**
c. Not all the boys left. **~A/O**

(4) a. All the boys didn't leave. A~/E
b. Not all the boys left. **~A/O**

According to traditional logic something is going wrong here, and it is hardly surprising that most logicians and prescriptive grammarians are troubled by constructions which cannot be explained in their system. As a result, they tend to dismiss them as exceptional cases – or even deny their existence (as we will see in more detail below).

From the point of view of traditional logic, the assignment of scope is a straightforward matter. The relative scope of several operators is indicated by the use of brackets or the convention that the operator to the left always has wide scope (scope according to linear order). This can be exemplified by the two formulae given here as (5)a and (5)b (cf. Horn 1989: 28), the negation of a universal statement and a universally quantified statement with a negative predicate, respectively.

(5) a. $\sim\forall x(Fx \rightarrow Gx)$ not all Fs are G
b. $\forall \mathbf{x}\sim(\mathbf{Fx} \wedge \mathbf{Gx})$ all Fs are non-G/no Fs are G

But, once again, some uses of *all…not* constructions fail to comply with logicians' prescriptions. According to linear order, the NEG-Q reading of *all…not* sentences is again the illogical one since *not* appears to the right of *all*.[11]

[11] Of course there are also other important distinctions between predicate logic and natural language, such as the appearance of material implication in universal statements, with the well-known ensuing paradox that (5)a turns out true if F does not exist.

Apart from linear order and brackets, another possibility of fixing scope is to generally assign a certain operator wide scope in relation to another. Lepore (2000: 312), for example, makes the unwarranted statement that "[i]n general, English quantifier expressions […] have priority ('wide scope') over negative expressions". As we shall see, this sweeping statement does not do justice to the far more complex situation in natural language. Although Lepore (2000: 313) admits that ambiguity can arise in certain cases, he dismisses such ambiguous sentences as unusual exceptions, which are disambiguated by "placing focal stress on the quantifier words", thereby forcing "their interpretations as negations".[12]

There are more researchers who only allow for the NEG-V reading for *all…not* constructions. Hamm (1989: 59), in his logic/formal semantics-based paper on natural language quantifiers, also distinguishes outer from inner negation of a quantifier ("äußere" and "innere Negation"), corresponding to "Satznegation" and "VP-Negation". His examples (2.21a, b) for outer and inner negation of the quantifier *alle*, the German equivalent of *all*, are given here as (6)a and b, together with their respective semantic analyses in (7)a and b:

(6) a. Nicht alle Studenten sind sportlich.
b. Alle Studenten sind nicht sportlich.

(7) a. ←alle(Student,sportlich) gdw. sportlich ⊄ Student.
b. alle←(Student,sportlich) gdw. Student ⊆ (A\sportlich).

This analysis, together with Hamm's table 2, in which he lists *kein* 'no, none' as the inner negation of *alle* 'all', shows that, according to Hamm, the only possible interpretation of *all…not* constructions should be NEG-V. Hamm does not mention the potential ambiguity of the inner negation of *all* in natural language.

As I have already pointed out, this kind of procedure is typical of traditional logicians, who either do not admit the existence of 'illogical' readings, or dismiss them as exceptional cases that can be explained away as imperfections of natural language. Another example of a logician overlooking a possible ambiguity is Ladyman (1999). In an introductory lecture on symbolic logic, he says that (where F denotes the property of being a cat and the universe of reference is the animal kingdom) the formula "∀x¬Fx […] should

[12] We will see in section 2.7 that intonation can indeed play a role in the disambiguation of *all…not* sentences, although, as I shall argue, it is not a sufficient explanation, if only for the reason that it does not apply to written language.

be read as 'no animals are cats', or 'every animal is not a cat' (of course this is false)". Ladyman only allows for the NEG-V reading of a sentence like *every animal is not a cat*, although this reading blatantly clashes with our world knowledge. Despite Ladyman's awareness of this clash, he does not acknowledge the existence of the NEG-Q reading. There is no mention of the fact that in normal circumstances people would in fact interpret such a sentence as NEG-Q and only NEG-Q (i.e. as *not every animal is a cat*), precisely because the NEG-V reading is blocked by their knowledge of the world.[13]

The marginalisation of the NEG-Q reading is not only typical of logicians, but also of some semanticists. Beghelli and Stowell (1997: 95-96), for instance, in a paper on the syntax and semantics of *each* and *every* in relation to negation, find that *all…not* sentences are interpreted with narrow scope negation (NEG-V) on the neutral intonation. At least they judge these constructions to be "fully grammatical", in contrast to *each…not* and *every…not* constructions, which they claim to be "awkward or ungrammatical" in most cases with neutral intonation.

But not all logicians and formal semanticists deny the existence of the NEG-Q reading for *all…not* constructions. Allwood (1977: 70), in his monograph on logic in linguistics, recognises the ambiguity of universal quantifier-negation structures when he says that "[f]or most speakers of English, [*Everyone did not explain the situation*] is ambiguous".[14] Cresswell (1973), too, recognises both readings; he even says that "in ordinary conversation [*everyone does not love Arabella*] is probably not ambiguous" (Cresswell 1973: 147, note 193), acknowledging that NEG-Q is the more usual sense. Kroch (1979) is likewise aware that there is no one-to-one relationship between syntax and semantics.[15] Although Kroch says that "the surface structure order of two logical operator words in a simplex sentence gives, all other things being equal, the basic scope order" (130), he concedes that "sentences with a single syntactic structure and intonation contour are often ambiguous as to the scope order of their logical operator words" and that "[t]his principle is reflected in sentences containing […] universal quantifiers preceding not" (131). While Kroch is interested in the generalisation and the formal representation of scope relations, I shall show that usually all other things are *not* equal and that surface order often does not give the

[13] In all fairness, as Ladyman (1999) is an introduction to logic, it cannot be expected to acknowledge ambiguity for the logic formula because logical formulae, by definition, are never ambiguous. The natural language translation of the formula is a poor choice nonetheless.

[14] Incidentally, Beghelli and Stowell likewise do not agree with Allwood about related structures, in which the order of negation and the quantifier is reversed. Beghelli and Stowell (1997: 96) claim that *John didn't read all the books* is ambiguous, while Allwood (1977: 70-71) thinks that *The situation wasn't explained by everyone* "can probably only be understood as having the [~∀] reading".

[15] "[T]he analysis assumes a relative independence between syntactic and semantic representations and rules." (Kroch 1979: preface)

scope order in natural spoken and written language. In other words, this study focuses on and discusses precisely the pragmatic/contextual factors that determine particular scope assignments.

While logic and natural language, as we have seen, work very differently when it comes to the interpretation of quantifier-negation structures, important insights into the nature of both logic and language can be gained from the juxtaposition of the two. One of the best-known authors employing this procedure is probably Laurence Horn. In his famous work on natural language negation (Horn 1989), he devotes two entire sections (4.3 and 7.3.3) to the scope of quantifiers and negation, discussing the ambiguity of *all…not* constructions. In the context of this issue he also addresses a further interesting point: the (seeming) disappearance of ambiguity when the universal quantifier is replaced by an existential one like *some*. For sentence (8)a, only the NEG-V reading is available, paraphrased in (8)b. The NEG-Q reading, which would be (8)c, is not available.

(8) a. Somebody didn't come.
b. There was somebody who didn't come.
c. ~~Nobody came~~.

We saw that sentence (8)a is an example of the **O** corner of the Square of Oppositions rather than of the **E** corner. Why is it that the NEG-Q reading disappears if the universal quantifier is replaced by the particular quantifier?

First of all it should be noted that in Horn's framework, the NEG-Q reading is the reading generally assigned to predicate denials or sentence negation structures. This is what Jespersen (1966 [1917]: 42f.) refers to as nexal negation because the nexus between subject and predicate is negated (the predicate is denied rather than asserted). In Horn's view, negation has semantic wide scope (also over the subject) in predicate denials. The NEG-V reading, on the other hand, can only occur in predicate term negation or constituent negation, when the scope of negation is restricted to the VP and the subject is therefore unaffected. Strictly speaking, predicate term negation is not negation, because something (albeit a negative predicate) is asserted of the subject. This is illustrated in sentences (9)a-b (from Horn 1989: 490):

(9) a. All the cookies {weren't/were not} eaten. predicate denial
b. All the cookies were {not eaten/uneaten}. predicate term negation

As can be seen, some syntactic structures permit both interpretations, predicate denial or predicate term negation.

What is the connection of all this to the question of the disappearance of the NEG-Q reading with particulars? We have seen that the NEG-Q reading is associated with predicate denial, while the NEG-V reading is associated with predicate term negation. Horn shows that sentences like (8)a behave more like predicate denials, rather than predicate term negations, even though the NEG-Q reading is generally thought to be impossible. Evidence for this claim comes from the Klima diagnostics for sentence vs. constituent negation. According to Klima (1964: 270), sentence negation structures "permit the occurrence of the *either-clause* […], and the question tag without *not*" and furthermore "the occurrence of the *neither-tag*." Examples (10)a-c (quoted from Horn 1989: 492) show that *some…not* structures behave more like predicate denials, exactly like the parallel NEG-Q *all…not* structures in (11)a-c. (The starred alternatives represent the diagnostics for constituent negation or predicate term negation.)

(10) a. Some of the arrows didn't hit the target and {?neither/*so} did some of the javelins.
b. Some of the arrows didn't hit the target and some of the javelins didn't {either/??too}.
c. Some of the arrows didn't hit the target, {?did they/*didn't they}?

(11) a. All the arrows didn't hit the target and {neither/*so} did all the javelins.
b. All the arrows didn't hit the target and all the javelins didn't {either/*too}.
c. All the arrows didn't hit the target, {did they/*didn't they}?

This indicates that the NEG-Q reading should in principle also be available for *some…not* structures, and in fact Horn (1989: 494) cites some attested examples of *some…not* constructions[16] with the NEG-Q reading, given here as (12)a-c:

(12) a. A sociopath wouldn't get through the first ten minutes of my films. They are too slow. Someone isn't killed in the credits. (from a newspaper interview with Brian de Palma)

[16] I have also come across negated particulars in Swiss German. Sentence (i) was produced by a child aged 3:6, sentence (ii) by an adult:
(i) Öpper muess nid mitcho. [17-8-2012; NEG-Q]
'Somebody must not come along.' (i.e. nobody should come along)
(ii) ... und öpper ander hät's nid gwüsst. [24-2-2013; NEG-Q]
'… and somebody else did not know it.' (i.e. no one else knew it)

b. She swung round, she took two strides to him, waiting for someone to stop her, but someone didn't. (from John Le Carré's *The Little Drummer Girl*)

c. Neither Inspector Walker nor the book's readers can be entirely certain that an innocent man has not gone to the gallows. (from a book review in the *New York Times*)

These examples, however, involve a clear violation of expectations. In (12)b, for instance, the girl expects someone to stop her, but *nobody* does (**E** corner, not **O** corner). According to Horn (1989: 496), "we can take the present examples to represent META-LINGUISTIC or second-instance negation." The NEG-Q reading of *some…not* constructions is thus limited to very special contexts, whereas it is much more easily available in *all…not* constructions.[17] Therefore we still have to account both for the ambiguity of *all…not* constructions and the lack of such an ambiguity (for the most part) of *some…not* constructions.

An explanation for these facts is offered by Horn (1989: chapter 7.3.3). According to him, the reason why the NEG-Q reading is not available for (13)a' is that this meaning can unambiguously be expressed by (13)b' – with a fully lexicalised **E** corner quantifier. Horn claims that inherently negative quantifiers are less marked than negated quantifiers.

(13)	a. Everybody didn't come.	a'. Somebody didn't come.	
	b. Not everybody came.	b'. Nobody came.	= NEG-Q paraphrase
	c. Nobody came.	c'. Not everybody came.	= NEG-V paraphrase

But the situation is different for (13)a with a universal quantifier. There is no lexicalised quantifier to express this NEG-Q reading (the **O** corner). While the availability of the fully lexicalised, and thus unmarked, *nobody* restricts the interpretation of (13)a' to NEG-V, the morphologically and syntactically more marked *not everybody* has "a relatively weak restrictive effect on the use of [(13)a] to convey its potential NEG-Q meaning" (Horn 1989: 499). This explanation predicts that "NEG-Q readings will be available for those predicate denials which do not have a lexicalized paraphrase" (Horn 1989: 499) – and this prediction, according to Horn, turns out to be accurate, if one examines actual language use.[18]

[17] Neal Whitman (22 August 2004) cites a blogger who is confused by a *some…not* construction that is intended to be understood in the NEG-Q sense. This shows that such cases are not only rare, but can lead to garden-pathing, which is typical of metalinguistic negation.

[18] However, this should probably be rephrased as "NEG-Q readings **can** be available…"; otherwise we would not find languages such as Dutch, which do not allow NEG-Q interpretations of *all…not* constructions (cf. Horn [1989: 545, note 15] citing Kraak [1966: 177] and Seuren [1967: 358] "on the

Horn's explanation why the NEG-Q reading is not available for *some…not* structures is convincing as far as it goes. However, with the very same argument we could be led to conclude that the NEG-V reading is not available for *all…not* structures (cf. (13)c). This reading can again be unambiguously expressed by the lexicalised quantifier *nobody* and so should restrict the interpretation of (13)a as NEG-V. This, however, is not the case: the NEG-V reading does exist, although, as we will see, in English it is far less frequent than the NEG-Q reading.[19] Why it is only the NEG-Q reading that can be blocked by lexicalised alternatives and not the NEG-V reading is not made entirely clear by Horn. There seem to be two reasons for this asymmetry. First of all, there is a "preference for scope to correlate with surface order" (Horn 1989: 499), which is met by NEG-V, but not by NEG-Q interpretations. The second reason is more difficult to describe. According to Horn (1989: 499), there is "a tendency for the (a) forms [of (13)] to become restricted to conveying their NEG-V meanings, given the existence of the alternative (b) expressions specialized for conveying their potential NEG-Q meanings". This tendency is, according to Horn, predicted by his principle of the DIVISION OF PRAGMATIC LABOR, which states that

> given two coextensive expressions, the briefer and/or more lexicalized form will tend to become associated through **R**-based implicature with some unmarked, stereotypical meaning, use, or situation, and the marked, more complex or prolix, less lexicalized expression tends to **Q**-implicate a marked message, one which the unmarked form could not or would not have conveyed. (Horn 1989: 197)

Given that, according to Horn, the NEG-Q reading is the general semantic interpretation of predicate denials, it is probably this reading which represents the unmarked meaning described in the Division of Pragmatic Labor. As *everybody…not* and *some…not* are "more prolix" ways of expressing NEG-Q than their alternatives *not everybody* and *nobody* (cf. (13)b), the former expressions tend to be interpreted as NEG-V. In case of the particular quantifier, the NEG-Q meaning is blocked altogether (except in metalinguistic contexts) because the alternative is a fully lexicalised negative quantifier. In case of the universal, on the other hand, the NEG-Q reading is not blocked completely because its alternative *not everybody* is not lexicalised.

Moreover, there is another reason that promotes the NEG-V reading, albeit (according to Horn) only pragmatically. In unmarked English sentences, the subject usually fulfils the

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nonambiguity of Dutch *Alle jongens lopen niet* 'All the boys were [not walking]'". This nonambiguity was also confirmed by my Dutch informant.)

[19] However, as we will also see in chapter 3.4, the NEG-V reading is the most frequent one in German. Horn's ideas, though very interesting, cannot account for such differences in frequency between different languages.

role of the topic. Since the topic is that part which the sentence is about, its referent is given and it is therefore outside the scope of other operators.[20] Together with the preference for scope according to linear order and the position of the negator between the subject and the predicate, this leads to a situation in which predicate denial "tends in practice to be functionally assimilated to **IV** (verb-phrase) negation" so that "an apparent sentential negation […] often mimics (without actually reducing to) constituent negation" (Horn 1989: 515).[21] This issue will be discussed in detail in chapter 4.5. While Horn stresses the fact that "the apparent location of subjects outside the semantic scope of sentence negation (predicate denial) is a pragmatically induced mirage" (509), I will argue that (from my functional perspective) this type of predicate-focus structure leading to NEG-V readings is in fact the unmarked case. Although Horn and I thus seem to agree on the basic explanation of the observed facts, our differences concerning, for instance, what is marked or unmarked spring from diverging perspectives: Horn is concerned with the semantics of negation, while my aim is an adequate description of the facts as observed in natural language data. The latter approach naturally highlights the contribution of functional and pragmatic factors.

Returning to the topic of *all…not* constructions, Horn thus interestingly reverses the usual explicandum. Most authors seek to explain the existence of the NEG-Q reading of *all…not* constructions, while taking the NEG-V reading of *some…not* (and lack of the latter's NEG-Q interpretation) as a matter of course. Horn, by contrast, in claiming that

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[20] This is also the reason why subjects such as *the king of France* in *The king of France is (not) bald* are usually associated with an existential presupposition – an issue hotly debated in the relevant literature and having important consequences for the theoretical conception of negation in different semantic and pragmatic frameworks.

[21] It is interesting that, based on corpus linguistic evidence, Zhou (2008: 20) argues that negation is generally constituent negation and should be represented accordingly in the semantics: "my position is more radical in that constituent negation IS how sentential negation works, not just as an add-on to how it works under 'normal' circumstances." Blühdorn (2012: 153) argues similarly for German:

> In my opinion, as opposed to other views, one can do with constituent negation and relinquish the assumption of a differently organised sentence negation. Every syntactic constituent is available as the reference point of NEG, including the sentence, which is the most complex syntactic constituent.
>
> [M]einer Meinung nach kann man gerade umgekehrt mit der Konstituentennegation auskommen und auf die Annahme einer anders organisierten Satznegation verzichten. Jede syntaktische Konstituente kommt als Bezugsausdruck für NEG in Frage, einschließlich des Satzes, der die komplexeste syntaktische Konstituente bildet.

Zifonun et al. (1997: 220), on the other hand, claim that constituent negation does not exist: "There is always a proposition in the scope of negation. It is impossible to negate only a part, as the notion of a 'constituent negation' claims." ("Im Skopus einer Negation liegt stets eine Proposition. Es ist nicht möglich, nur einen Teil zu negieren, wie dies die Auffassung von einer 'Satzteilnegation' behauptet hat.") They argue that "the impression of special negation with narrow scope arises from the interaction of negation with effects of focus and contrast, which are particularly conspicuous in cases of negation." ("Der Eindruck, es gebe Sondernegationen mit engerem Skopus, ist auf das Zusammenwirken der Negation mit Fokussierungs- und Kontrastierungseffekten zurückzuführen, die bei Negationen besonders ins Auge fallen", Zifonun et al. 1997: 853).

negation has wide scope in predicate denials, takes the NEG-Q reading as given by semantics and seeks to explain the existence of the NEG-V reading and the lack of NEG-Q interpretations with particular quantifiers.

Horn's explanation, which rests on the asymmetric lexicalisation of quantifiers, raises another question: Why is the **O** corner not lexicalised? Interestingly, this non-lexicalisation of the **O** corner extends to the binary quantifiers (*not both*) and to quantificational adverbs (*not always*), correlative conjunctions (*either…or not*) and binary connectives (*and not*), and is also attested cross-linguistically. In this study, I cannot go into the reasons for this non-lexicalisation, but – according to Horn – the explanation mainly rests on the fact that **O** values tend to become understood as **E** values (**O→E** drift), and that the two subcontraries **O** and **I** implicate each other (although they do not logically mean the same thing) through the Quantity-based conversational implicature, so that only one of these two values has to be lexicalised (*Not all the boys left* usually implicates that *Some boys left* and vice versa). The markedness of negation (priority of affirmation) is responsible for the fact that it is the **O** values, rather than the **I** values, which are not lexicalised. For a more detailed explanation, I refer the reader to Horn (1989: chapter 4.5).[22]

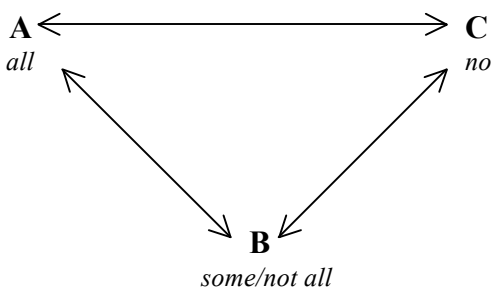
As has been mentioned, the **I** and **O** corners of the Square of Oppositions are often used synonymously in natural language, although "[t]he symmetrical inference between [them] is […] valid, not as a logical or semantic principle, but as a context-dependent, generalized conversational implicature" (Horn 1989: 212). The fact that in natural language *some* (the **I** corner) is often or usually derived pragmatically from *not all* (the **O** corner) via a Gricean implicature based on the principle of quantity, or Horn's **Q**-based implicature (Horn 1989: 195), led Jespersen (1966 [1917]), among others, to use a "three-

[22] Jaspers (2005: 24) proposes a different, well-argued, explanation of the missing **O**-corner lexicalisation in natural languages, together with a reduction of the classical Square of Oppositions to a cartesian model that rests on four primitives: "(i) the pivot operator SOME, (ii) the relation CD [contradictoriness] between the pivot SOME and NO(NE), (iii) the entailment relation (ENT = ⊢) from ALL to SOME, and (iv) the Law of Contraposition". Jasper's (2005: 38) aim is not only to explain the non-lexicalisation of **O**, but also "to bring to light an isomorphism between the relational structure of logical calculi, the semantic-cognitive properties of logical operators and their lexical-morphological realizations."

Horn's explanation of the non-lexicalisation of **O**-corner values is attacked rather unconvincingly by Moeschler (2007). Moeschler's views on *all…not* seem to be confused: On the one hand he admits that *all…not* sentences can be interpreted as NEG-V or the **E**-corner value, which from a strictly logical point of view they are in any case. On the other hand, however, he clearly takes the NEG-Q reading (**O**-corner) to be the unmarked interpretation, when he claims that the (aptly chosen) sentence "[*Tous les linguistes ne connaissent pas la logique/All linguists do not know logic*], or O, means simply that there is at least one linguist who does not know logic" (Moeschler 2007: 10). The problem here is that Moeschler insinuates that *all…not* is an **O**-corner expression that can also be interpreted as an **E**-corner expression, whereas the opposite is in fact the case. I suspect that this confusion is due to the fact, which he acknowledges, that in French the *not all* paraphrase (*pas tous*) is at least awkward if not ungrammatical and that therefore the *not all* sense is often expressed by *all…not* (*tous…pas*) in French.

cornered Square" instead of the classical Square of Oppositions. In this tripartition, the **O** corner of the Square of Oppositions is missing, or rather, the **I** and the **O** corners are collapsed into one (**B**), as shown in (14).

(14)



Although the collapsing of the two subcontraries prevented Jespersen from arriving at Horn's explanations, some interesting remarks on *all…not* sentences can be found in his work on negation. Before discussing Jespersen's insights in more detail, however, we will turn to another philologist whose comments on *all…not* constructions precede Jespersen's.

2.4 Beginning of 20th century: Astute philologists

More than a hundred years ago, Tobler (1902) wrote about *all…not* constructions in the context of his commentaries on French grammar. He discusses the NEG-Q reading of French *all…not* constructions with the typical example of the proverb *Tout ce qui reluit n'est pas or*, which is literally the same in English (*All that glitters is not gold*; all German and French examples and quotes are translated by me). Tobler acknowledges that some consider this reading to be illogical, and that the German expression *Nicht alles, was glänzt, ist Gold* ('not all that glitters is gold') may seem to be more appropriate

> because the negation is placed next to the word that expresses what the speaker mainly wants to negate. [… H]e merely aims at the generalisation; and so his speaking seems to proceed quite adequately, when the negating word moves to the word for the sake of which, according to him, the positive sentence claims something false.[23] (192)

But Tobler (1902: 192-193) defends the French way of expressing this proverb (an *all…not* construction in the NEG-Q sense):

[23] "…, wird doch die Negation zu dem Worte gesetzt, in welchem liegt, was der Sprechende vorzugsweise ins Auge faßt, wenn er verneint. [… E]r erhebt sich nur gegen die Verallgemeinerung; und so scheint denn sein Sprechen ganz angemessen zu verfahren, wenn es das negierende Wort zu dem Worte rückt, um dessen willen nach seinem Dafürhalten der positive Satz Falsches behauptet."

> Therefore the French expression, which places the negation in the closest conceivable connection with the verb, the centre of the statement, is adequate to the highest degree by saying: "being gold" must not be predicated of the subject "all that glitters". Though it is not indicated that it is the generalisation – introduced by "all", which makes the disputable thesis untenable for me.[24]

Moreover, Tobler thinks that the actual German proverb *Es ist nicht alles Gold, was glänzt* (literally: 'it is not all gold that glitters') is even more appropriate because here the negator is placed both next to the verb and to the quantifier. This structure was also possible in older French: *n'est pas tout or quanqu'il reluit* (I will come back to this impersonal structure in chapter 4.9).

Tobler also mentions that the *all…not* structure of the French proverb can be interpreted in the NEG-V sense, for which he gives, among others, the following example: *maxime usée et triviale que tout le monde sait, et que tout le monde ne pratique pas* ('an overused and trivial principle that everybody knows but everybody does not observe').[25] And, in contrast to other researchers, who maintain that this construction is not ambiguous in German[26], he notes that ambiguity also exists in German and that there is the same possibility of misunderstanding as in French when we say *Alle Eingeladenen werden nicht erscheinen* ('All the invited [people] will not appear') or *Alle Druckfehler können hier nicht aufgezählt werden* ('All printing errors cannot be enumerated here'). Moreover, we may use this kind of construction "without being guilty of a Gallicism"[27] (193, note 1).

Of particular interest is the fact that Tobler seems to consider the 'logical' NEG-V reading the marked option:

> The difference between the two meanings of an otherwise identical verbal expression is rather found in that one time the speaker faces a universal statement by negating it [NEG-Q], while another time he renders his own negative statement universal [NEG-V]. Here it is to be noted that in the latter case the expression in question is not the one directly provided by the language.[28] (194)

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24 "Darum ist denn auch der französische Ausdruck, der die Negation in die engste denkbare Verbindung mit dem Verbum, dem Kern der Aussage, bringt, ein im höchsten Grade angemessener, indem er besagt: von dem Subjekte 'alles Glänzende' darf 'Gold sein' nicht prädiziert werden. Dabei bleibt freilich unangedeutet, daß das, was die zu bestreitende These für mich unannehmbar macht, die Generalisierung ist, welche durch 'alles' in sie hineingebracht wird."

25 Tobler, although originally writing at the end of the 19th century, actually gives only real examples, although these are for the most part literary (in contrast to many 20th century researchers, who, as we will see in the following sections, use only made-up examples).

26 For instance De Haan (1997: 176), who claims that the NEG-Q reading does not exist in German.

27 "ohne daß wir uns eines Gallicismus schuldig machen".

28 "Der Unterschied der beiden Bedeutungen einer sonst identischen Redeweise […] liegt vielmehr darin, daß das eine Mal der Sprechende einem universalen Urteil sich verneinend gegenüberstellt [NEG-Q], das andere Mal sein eigenes negatives Urteil zu einem universalen macht [NEG-V]. Dabei ist aber zu bemerken, daß im zweiten Falle die in Rede stehende Wendung nicht die unmittelbar von der Sprache gegebene ist."

His reason for this opinion is the fact that the NEG-V reading – a universal negation – is normally expressed in a different way, i.e. by negating a singular item.[29] Interestingly, as examples of this normal way of expressing universal negation, Tobler lists lexicalised negative universal quantifiers, such as *nul*, *personne ne*, *rien ne*, *jamais*. In Tobler's opinion, the choice of a structure in which the quantifier is followed by negation is much rarer and "has, as every Frenchman will certainly confirm, something of an anacoluthon; choosing it will always be due to special reasons".[30] This opinion is in stark contrast to all the logicians who consider the NEG-V reading either the only option or at least the unmarked one. (The reasons for choosing NEG-V *all…not* constructions are considered in chapter 5.)

Finally, Tobler was probably the first researcher to note that there is a third possibility of interpreting *all…not* constructions, namely the COLL reading. "It should also be mentioned that there may be 'triguity' under certain circumstances" and that the third collective reading is "neither the denial of a universal judgment, nor a universal negative judgment, but a simple proposition regarding a single being, which admittedly consists of added together elements"[31] (Tobler 1902: 195, note 1). He gives sentence (15) as a French example of an *all…not* construction in the collective sense:

(15) Toutes les réponses publiées jusqu'ici, malheureusement, ne donnent pas grand espoir d'une rénovation du théâtre anglais. Les écrivains consultés sont unanimes à répondre que le fossé est devenu trop profond entre le théâtre et la littérature.

Tobler notes that we do not know how to interpret the first sentence until we have read the second one; it then becomes clear that the correct reading could be paraphrased as *Not even all the responses together give much hope…*, i.e. the reading is COLL. This insight supports my hypothesis that the context is essential for the interpretation of *all…not* constructions. We will see later on that there are a number of similar instances in my corpus material.

The existence of the COLL reading was also noted by Jespersen (1966 [1917]) some years after Tobler, when he wrote about *all…not* constructions in the context of his famous

[29] "[S]agt man bezüglich eines Einzelnen, einer geringsten Menge negativ aus" (195).

[30] An anacoluthon is a break in the sentence or a formally incorrect continuation of a sentence. The original reads as follows: the *all…not* construction "hat wie gewiß jeder Franzose bestätigen wird, etwas Anakoluthisches; es zu wählen werden jedesmal besondere Gründe bestimmen" (195).

[31] The originial reads: "Es sei noch erwähnt, daß unter Umständen Dreideutigkeit vorliegt" and that the third collective reading is "weder die Ablehnung eines universalen Urteils, noch ein universales negatives Urteil […], sondern eine einfache Aussage bezüglich eines einzelnen Seienden, das sich freilich aus addierten Elementen zusammensetzt."

work on negation. He mentions briefly that "[t]here is a third possibility, when *not* is for the sake of emphasis put before *all* in the sense of 'not even'" (89); according to Jespersen "*all* here means the sum of …" (90). One of the examples supplied by Jespersen is from Shakespeare's *Richard II* (III, ii, 54-55): "Not all the water in the rough rude sea/ Can wash the balm off from an anointed king." However, this construction has a slightly different word order with *not* being placed before *all*. The use of *not all* in the collective sense seems to be archaic, although it can occasionally be found in modern texts as well.

Jespersen is led to comment on *all…not* constructions in the context of a discussion of the Square of Oppositions, or rather his triangular adaptation of the square, already mentioned in section 2.3. He states that the **O** corner (his **B** corner) is normally expressed by *not all*, supporting his statement also by Danish and German examples such as *Nicht alles, was glänzt, ist Gold* ('not all that glitters is gold') or *Es ist nicht alles Gold, was glänzt* ('it is not all gold that glitters', which is the usual form of the proverb in German). However, Jespersen (1966 [1917]: 87) says, "very often *all* is placed first for the sake of emphasis, and the negative is attracted to the verb in accordance with the general tendency mentioned above" (that is the tendency to use nexal negation), resulting in NEG-Q *all…not* constructions. While Jespersen (1966 [1917]: 87) is aware that "[t]his is often looked upon as illogical", according to him "English examples of this arrangement are very frequent". He goes on to corroborate this claim by listing examples dating from as far back as Chaucer.[32] Jespersen also gives numerous examples of this phenomenon from other languages, including French, Danish and German. Further, Jespersen notes that if the sentence contains a special (or implied) negative (e.g. what Tottie 1991 calls affixal negation, or Horn's incorporated negation) as in *all this is unnecessary*, only the NEG-V reading is possible. But "the same effect is rare when we have a nexal negative with one of the *A*-words" (Jespersen 1966 [1917]: 89), meaning that *all…not* constructions are only rarely interpreted in the NEG-V sense. Jespersen cites some French NEG-V cases, but – interestingly – he knows "no English examples of this".

Although Jespersen's comments on *all…not* constructions are correct and, as we shall see later on, also in accordance with my results that the NEG-Q reading is far more frequent than the NEG-V reading, at least in English, his conclusion concerning quantifiers and negation a little later in the text is surprising:

[32] Again, note Jespersen's use of real examples (in accordance with philological tradition), in contrast to more recent literature, which often relies solely on made-up examples.

> The ordinary treatment of both A- and C-words when negatived [sic] may be brought under one general rule: when the absolute notion (A or C) is mentioned first, the absolute element prevails, and the result is the contrary notion (A … not = C; C … not = A). If on the other hand, *not* comes first, it negatives [sic] the absolute element, and the result is the intermediate relative (not A = B; not C = B).
>
> Jespersen (1966 [1917]: 91-92)

These generalisations amount to the claim that scope is always assigned according to linear order. They therefore contradict Jespersen's preceding remarks on the frequent use of *all…not* constructions in the NEG-Q sense. According to the above quotation, only the NEG-V reading should be possible for *all…not* constructions ("A … not = C", not B). Thus, despite his astute observations, Jespersen's conclusions are brought in line with traditional logic, which, as we have already seen in the introduction, cannot account for the scope interactions of quantifiers and negation in natural language(s).

Another brief paper in the philological tradition is Russell (1934), a reaction to Robert C. Pooley's *Grammar and Usage in Textbooks on English* (1933). Pooley defended the NEG-Q construction against previous prescriptions to use *not all* instead of *all…not* because the latter can supposedly only be interpreted as NEG-V. To support Pooley's defence of NEG-Q *all…not* constructions, Russell cites a number of relevant instances by famous authors from Shakespeare, through Milton, Swift and Johnson to Macaulay, who are all renowned for their 'stylistic superiority'. In an interesting remark Russell states that he found no examples in modern belletristic literature, but rather in the critical literature. Russell (1934: 118) thinks that this "is significant; for it is the critic who tries to be correct, who has to be as free as possible from expressions of the slightest ambiguity." He then goes on to cite many professors whom he sees as masters of impeccable language use and who still used NEG-Q *all…not* constructions. Interestingly, he refers to the NEG-Q reading as the construction's "idiomatic rather than its grammatical sense!" (Russell 1934: 119), betraying prescriptive influence despite his conviction that "[t]he construction seems clear not only to modern writers but, so far as [his] observation goes, to most cultivated people" (119). In his 1935 Addenda on the 1934 article, Russell lists more illustrations of NEG-Q *all…not* constructions, dating back as far as Chaucer. While Russell is certain that the writers he cites are very careful in their placing of *all* (before or after *not*), he also doubts that carelessness in this respect could really lead to ambiguity (Russell 1935: 317). This trust in the disambiguating power of the context is justified by my finding that *all…not* constructions are not ambiguous in context in the vast majority of all cases (cf. chapter 3.4).

2.5 (Generative) interest in quantifier-negation constructions in the 1970s

Following Chomsky's *Syntactic Structures* in 1957, the 1960s and 1970s saw a flood of generative publications on many different topics. Matters relating to negation and quantifiers are discussed from a generative perspective by Klima (1964), Jackendoff (1969, 1971 and 1972), Lakoff (1969), Partee (1970), Carden (1970a, 1973a, 1973b and 1976) Anderson (1973), Hogg (1977) and Brandon (1982), among others. Their reliance on intuition as the primary source of linguistic information was of course a radically different methodology than that employed by the philologists writing at the beginning of the century (cf. section 2.4). These philologists often based their observations on authentic examples (albeit usually literary ones), and so their methodological relation to modern corpus linguistics is much closer than that of the chronologically less far removed generativists. Due to the latter's concentration on LANGUE and lacking interest in PAROLE and any kinds of contextual factors, I did not find a single authentic example in the generative literature on quantifiers and negation that I examined. At times, the constructed examples are very stilted. For instance, Baker (1970a: 137), in a short reply to Jackendoff (1969) uses examples with fronted objects like *Some of the pictures not many of the people liked*. I found no *all…not* constructions with fronted objects in the whole British National Corpus (BNC). A sentence like that would most likely be formulated as *Some of the pictures weren't liked by many of the people*. The use of constructed examples and intuition leads to the well-known problems of intuition-based studies (criticised, for instance, in Labov 1972a and 1996). A similar criticism of the transformational-generative methodology is formulated by Jordan (1998: 708), who says that "[u]nfortunately most of this work is with made-up examples and thus textual and contextual meanings of negation are poorly considered or ignored." The present corpus linguistic study will demonstrate that contextual factors are central to the interpretation of quantifier-negation structures and thus further highlight the inadequacy of made-up examples. Bearing in mind the generativists' very different research aims and methodology, which make a major part of their work irrelevant for the present study, a closer look at their contributions to quantifier-negation structures and the reactions they sparked can still yield some interesting insights (and teach researchers to avoid some methodological pitfalls).

Klima (1964) was the first major work on negation in English from a generative grammarian's perspective.[33] Since Klima is only concerned with a very strict sense of

[33] "By *grammar* will be understood *the rules for generating the sentences of the language*" (Klima 1964: 247; original emphasis).

grammar, consisting only of "the form of sentences", not with "similarities and differences in the meaning of sentences" (247), there is no discussion of how ambiguous structures are interpreted in natural language. One hint that the same surface structure can have more than one underlying structure (and thus meaning) is found in Klima's treatment of the sentence *I will force you to marry no one*, which is "structurally ambiguous" (Klima 1964: 286). As far as the scope of negation is concerned, Klima (1964: 316) asserts that it "varies according to the origin[34] of the negative element in the sentence (over the whole, over subordinate complementary structures alone, or only over the word containing the negative element)." So according to Klima, a difference in the scope of negation may not be visible in the surface structure, but each reading of an ambiguous surface structure must be derived from a different underlying structure. Of further (but only indirect) importance to the topic of the present study is Klima's distinction between sentence and constituent negation, which we have already encountered in Horn's discussion of the interpretation of *some…not* sentences (section 2.3); Klima does not say anything directly relevant to the scope interactions of quantifiers and negation.

Apart from Klima's seminal, but more general work on English negation, a number of generativist researchers were interested in quantifier-negation structures for mainly two reasons. First, researchers debated about the derivation of quantifier-negative structures. Jackendoff (1969: 226), for instance, argues against Carden's proposal that quantifiers are generated in the base as verbs of higher sentences. This proposal is defended in Carden (1970a, 1973a, 1973b and 1976), and attacked again in Jackendoff (1971 and 1972). Jackendoff (1969) and Lakoff (1971) propose "analyses of the NEG-V dialect in which relative scope is determined by surface (or shallow) structure primacy relations" (Carden 1973a: 24). I will not go into the details of their respective argumentations because the present study has an entirely different focus. Nevertheless, there seem to be some problems in Jackendoff's argumentation. For instance, in his 1969 paper, he omits the quantifier *all* from the discussion. The inclusion of this quantifier, however, would undermine some of his arguments.[35]

The second reason why generativist researchers became interested in *all…not* constructions was a growing concern on how to deal with syntactic dialects or even idiolects. People's diverging reactions to *all…not* sentences was seen as a prime example

[34] Here, "origin" refers to the origin of negation in the underlying structure.

[35] Jackendoff (1969: 239) says, for instance, that "the quantifier in the subject prohibits a reading of sentence negation, and so the tags [cf. Klima's diagnostics for sentence negation] are unacceptable". If, however, the quantifier *some* in Jackendoff's examples are replaced by *all*, the tags are acceptable. Cf. also Horn's critique of Jackendoff (Horn 1989: 492).

of such idiolects. Because of this interest in syntactic idiolects, *all…not* constructions are treated quite extensively in Carden (1970a, 1973a, 1973b and 1976), with reactions to Carden's analysis in Jackendoff (1969 and 1971) and to his methodology and results in Heringer (1970), Stokes (1974), Labov (1972a, 1975) and Baltin (1974). Carden's studies and the ensuing reactions therefore merit a closer discussion.

Carden (1970a) starts by attacking the widespread practice in generative grammar of ignoring dialects and so-called idiolects because they are an embarrassment to the analysis in question. Structures that are acceptable in certain varieties other than the one under discussion are treated as exceptions or completely disregarded (in a manner similar to how logicians treat the 'illogical' NEG-Q reading of *all…not* constructions). Opposing these shortcomings, Carden (1970a: 281) stresses the "obligation to seek an analysis that explains as many as possible of the observed idiolects in a consistent manner" and goes on to exemplify this strategy by providing an analysis that explains the observed idiolectal differences in the interpretation of *all…not* constructions.

However, despite this promising start, the entire study is highly questionable due to various methodological problems. For instance, Carden presents his (alleged) idiolects (NEG-Q, NEG-V and AMB)[36] as facts without providing the reader with any evidence of their existence. Although it becomes clear that he must have performed interviews with an unknown number of informants, speaking unknown varieties of English, he admits (in a footnote) that he performed no statistical analysis. These shortcomings alone would be enough to render his findings questionable and certainly not reproducible. In addition, we are informed (again only in a footnote) that "to simplify the presentation, the discussion in the text is limited to normalized forms of the NEG-Q, NEG-V and AMB dialects" and that "[t]his should not obscure the fact that other dialectal variations cross-cut the ones we are concerned with, so that there are a large number of sub-dialects within the NEG-Q, NEG-V and AMB dialects" (Carden 1970a: 282). It is regrettable that Carden, although he recognises the need to improve a methodological shortcoming often encountered in the generative literature, does not establish and present his results in a more convincing way.

Carden (1973a) continues his argument for the "unified-analysis methodology" (1973a: 1) by subjecting three problems to a unified analysis, one of which is again the

[36] NEG-Q: idiolect in which only the NEG-Q reading of *all…not* constructions is obtained; NEG-V: idiolect in which only NEG-V is obtained; AMB: both readings are obtained.

existence of the "randomly distributed dialects"[37] (1973a: 4) NEG-Q, NEG-V and AMB. In this study (Carden 1973a: 24), we are finally presented with a few numbers: out of 35 informants, 14 (or 40%) only get a NEG-Q reading for the sentence *All the boys didn't leave*, while 4 informants (11%) only get the NEG-V reading and 17 (49%) are AMB.[38] The quantifier-negation results are not very illuminating. Carden (24) himself admits that "the example has been simplified to such an extent that we cannot draw conclusions about the actual analysis of quantifiers and negation from the schematic arguments [he] give[s] in this section." In Carden's defense it has to be said that the focus of the paper is on randomly distributed dialects and the unified-analysis methodology. At the same time, this means that only two of Carden's remarks are relevant to the present study: the statement that an unspecified number of informants "have been observed to change from NEG-Q to AMB over a period of a year or so, but that no changes in the other direction have been noticed" (Carden 1973a: 31, note 46) and that NEG-V is very rare.

In the same year, Carden (1973b) attacked two other assumptions, using the reported idiolects as evidence. These assumptions are a) the 'disambiguation hypothesis', which states that "a context[39] can subtract readings but never add them" (172) and b) the assumption that all readings are equally strong, i.e. none are favoured. Carden is right in attacking at least a). Similar to the 'disambiguation hypothesis', Jordan (1998: 736) notes that

> we often need context to determine the meaning of a statement that otherwise makes no sense. Even when a statement *does* make sense, we may still need contextual clues (as well as intonational and other clues within the statement itself) to allow us to determine which of several possible meanings, or nuances, is the one intended.

Though this is undoubtedly true, it is also the case that people often have difficulty imagining a context for sentences presented in isolation, so that these sentences may be interpreted in fewer ways than if they occurred in a real context. Carden is thus right in criticising a).

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[37] In contrast to Carden's proposal of randomly distributed dialects, which would mean that there are no geographical or social correlates to the linguistic differences, Gil (1982: 437) thinks that the interpretation of *all…not* constructions "may exhibit geographical dialectal variation". According to Gil, "Midwest American English speakers generally obtain only the NEG-Q interpretation", while "North-East American English speakers may obtain either or both interpretations", which is apparently consistent with Carden's results. Personally, I did not have the impression that geographical variation has an influence on *all…not* sentences, but the present study does not focus on this issue. However, Labov's (1975) results, mentioned later in this chapter, indicate that such dialectal differences are unlikely.

[38] It must be noted that the percentages in brackets are provided by myself; Carden only gives absolute numbers.

[39] We will see below that Carden has a much narrower or even different conception of *context* than is used in the present study. What Carden calls *context* would be called *syntactic constraints* in the present work.

As evidence against the two assumptions a) and b), Carden again presents his findings on the quantifier-negation idiolects discussed earlier. His reason for attacking the 'disambiguation hypothesis' is a particular result of his interviews, which he withholds in the previous two papers. Carden (1973b: 171) notes that "starting with informants for whom [*All the boys didn't arrive*] has two equally strong readings, we find informants for whom one reading is progressively stronger until at last we find informants for whom only one reading is possible." So what he called distinct dialects (NEG-Q, NEG-V and AMB) in the previous studies should in fact be treated as the "endpoint[s] of the continuum of informants in the ambiguous dialect" (171). In this paper (Carden 1973b), we are presented with slightly different figures than in Carden (1973a): out of 40 informants, 16 (40%) are NEG-Q, 4 (10%) are NEG-V and 20 (50%) AMB for the sentence *All the boys didn't arrive*. But these results are complicated by the fact that there are several subdialects, as was already mentioned in Carden (1973a; cf. above). Six NEG-Q informants switch to a NEG-V reading for the sentence *All the boys didn't arrive until midnight* (addition of *until*-adverbial; subdialect Switch-Q) and two NEG-V informants switch to a NEG-Q reading for *All the boys didn't arrive, did they?* (positive question tag; subdialect Switch-V). Thirteen AMB informants get only a NEG-Q reading when a positive question tag is added, and only a NEG-V reading with the *until*-adverbial (subdialect A), while the rest (seven AMB informants) get both a NEG-Q and a NEG-V reading with the positive tag (subdialect B). For ease of reference, these results are presented in Table 1.

Table 1. Carden's dialects and subdialects; adapted from Carden (1973b: 177, Figure 2)

TEST SENTENCE	**NEG-Q**		**NEG-V**		**AMB**	
	A	**Switch-Q**	**A**	**Switch-V**	**A**	**B**
All the boys didn't arrive.	NEG-Q	NEG-Q	NEG-V	NEG-V	AMB	AMB
All the boys didn't arrive, did they?	NEG-Q	NEG-Q	*	NEG-Q	NEG-Q	AMB
All the boys didn't arrive until midnight.	*	NEG-V	NEG-V	NEG-V	NEG-V	NEG-V
NUMBER OF INFORMANTS	10	6	2	2	13	7
	16		4		20	
TOTAL	40					

It has to be noted that the addition of the negative polarity items (NPIs) (*until*-adverbial and positive question tag) is regarded by Carden as a different context, whereas I would call it a syntactic constraint and use *context* in a much broader sense. Carden (1973b: 174) also notes that "even when two readings are possible and the addition of context can force either reading", "informants regularly report that one reading is favored – 'stronger', 'more

likely', or 'more natural'." Only a minority of AMB informants found NEG-Q and NEG-V equally strong, while most of them favoured the NEG-Q reading (175).[40]

The tentative conclusion we can draw from Carden's results so far is mainly that the NEG-Q reading seems to be favoured by most people, at least when made-up sentences are presented out of context. But the fact that the AMB dialect is always the most frequent one together with the insight that NEG-Q speakers switch to AMB after a certain time leads us to question the very existence of Carden's dialects. The idea of a NEG-V dialect is based on very few informants only, and here the problem may be that these informants could not imagine a context for the NEG-Q reading. These suspicions are confirmed by Labov (1975: 18), who says that while "[t]he normal situation, repeated in many investigations, is for 70-90% of any population to show NEG-Q responses", further investigations "show that an increasing number of subjects can see both possibilities." Labov's own experiments "indicate that pure NEG-Q and NEG-V dialects may not exist, since it is possible to elicit NEG-V interpretations from almost anyone by the right experimental technique" (Labov 1975: 18). Together with more evidence, which will be presented below, this justifies the assumption maintained in the present study that all readings can, in principle, be accessed by everybody and that Carden's dialects represent at best preferences for certain readings when sentences occur out of context.[41]

Carden (1976), in a much longer work on English quantifiers, does not do much to dispel doubts concerning the existence of the NEG-Q, NEG-V and AMB dialects, although we finally get some more information on how his interviews were actually conducted. Results were obtained from sixty college-educated, middle-class, North-Eastern American informants, who had to judge the grammaticality and meaning of orally presented sentences in open-ended interviews (Carden 1976: 7). It is problematic that the subjects were informed of the purpose of the investigation. Since, as has already been mentioned, intonation and stress can disambiguate the constructions in question, Carden first presented the sentences with neutral intonation, "then with [intonation] patterns known to enforce various readings" (8-9). But it is hard to imagine a presenter strictly controlling his intonation throughout an open-ended interview, at least without sounding unnatural. This suspicion is

[40] Carden adds the *until*-adverbial and the positive question tag to test his proposal for the derivation of quantifier-negative structures; the details of this proposal are not relevant to the present study.

[41] The only indication for a NEG-V dialect I found in the corpus material is sentence (i):

(i) So ***all*** these **a lot of** these firms are *not* up to the job why do why don't you sack them people are not up to the job why don't they get sacked? [HVO:297; SPOKEN; NEG-Q]

The speaker clearly intends a NEG-Q meaning, so that it could be argued that he changes the quantifier from *all* to *a lot of* because the NEG-Q reading is not available to him with *all*. It should be noted, however, that this is only speculation. Possibly the change of quantifier and the seeming unavailability of the NEG-Q reading is due to information-structural requirements (cf. chapter 4.5).

in fact confirmed by Carden himself when he admits that "there were nine cases of interviewer error (mostly failure to present a needed intonation pattern)" (Carden 1976: 11, footnote 8); this shortcoming is again only mentioned in a footnote.

Apart from these methodological problems, there seem to be inconsistencies in Carden's (1976) results. While he says that chapter 3 "is a slightly revised version of" Carden (1970a), the results presented in this chapter are actually the same as in Carden (1973), not those in Carden (1970a). And although at the beginning of the paper he says that he had sixty informants, in this chapter they are suddenly reduced to forty-eight[42], of which, however, he only used forty for the analysis of the results[43]. This means that he rejected the responses of eight (or even twenty) informants for various reasons – that is 17% (or 33%) of the total number. This might lead a critical reader to suspect the author of having a rather liberal attitude to handling his results. It is unfortunate that these methodological inconsistencies render it difficult to reproduce and evaluate Carden's results. Considering that Carden worked in the transformational-generative framework, he must probably be seen as quite a revolutionary. However, while Carden's ideas are stimulating, his findings – due to the numerous methodological problems discussed above – are unfortunately only of limited use in the context of an empirical, corpus-based study.

Similar criticism of Carden's methodology is found in Heringer (1970). Heringer criticises Carden's interviews because of the disparity between Carden's results and his own. He thinks that Carden's interview methodology is prone to 'experimenter bias effects' and that in the interviews "there are many opportunities for self-fulfilling prophesies to take effect, both ones conditioned by theoretical position and also ones conditioned by the linguist's own idiolect" (Heringer 1970: 294). Heringer argues that these problems are less likely to occur in his questionnaire technique. Heringer's informants[44] had to judge the acceptability of sentences provided with a disambiguating situational content, "within which the sentence […] could have only the required interpretation" (Heringer 1970: 290). By way of illustration, two of Heringer's test sentences are reproduced here as examples (16)a and b, with contexts forcing a NEG-Q and a NEG-V reading, respectively:

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42 The question whether these 48 informants are a subset of the 60 informants and in that case why only the subset was chosen, or whether this was a completely different set of interviews with different informants, is answered nowhere.

43 Again, this shortcoming is only mentioned in a footnote.

44 Heringer's 59 informants included 34 linguistics students, 18 professional linguists and 7 persons with no linguistic training. The acceptability of sentences was judged on a scale from 1 (unacceptable) to 4 (acceptable), but for the calculation of the results, the ratings 2 (uncertain, but probably unacceptable) and 3 (uncertain, but probably acceptable) were collapsed with 1 and 4, respectively.

(16) a. All the boys didn't leave. [Used in the situation where some of the boys remained.]

b. All the treasure seekers didn't find the chest of gold. [Used in the situation where none of them found it.]

It should be noted that the disambiguating context sometimes also consisted of a situational description rather than a mere paraphrase. At least some of Heringer's results differ from Carden's. For instance, Heringer found a new so-called 'out-dialect' of nine informants who accepted neither NEG-Q nor NEG-V sentences. Heringer notes that almost everybody accepted the NEG-Q reading with a positive question tag. Moreover, Heringer notes – in contrast to Carden – that the interpretation of sentences with the *until*-adverbial seems to be independent of the interpretation of bare sentences (without the *until*-adverbial), although these sentences appear to be related. This means that Carden's argument for the higher predicate analysis is questionable. Similar to Carden's results is the finding that NEG-V is very rare: there are only two 'NEG-V speakers' (one of whom accepts NEG-Q with a positive question tag). For ease of reference, Heringer's results are summarised and presented in a different way from his in Table 2:

Table 2. Number of informants accepting sentences with a context forcing either NEG-Q or NEG-V readings (extrapolated from Heringer's Table 1; percentages for N=53)

	NEG-Q context		**NEG-V context**	
BARE SENTENCE	42	79%	19	36%
***UNTIL*-ADVERBIAL**	19	36%	21	40%
POS. QUESTION TAG	52	98%	20	38%

As can be seen, the NEG-Q readings are again far more acceptable than the NEG-V readings. Moreover, it seems that the addition of the *until*-adverbial reduces the acceptance of the NEG-Q reading, while the presence of the positive question tag makes the NEG-Q reading acceptable for (almost) all informants. In sum it can be said that Heringer's study is an improvement on Carden's in that his methodology is more stringent. Heringer is certainly correct in his criticism of Carden, and his insight that "judgement of acceptability depends partly on how easy it is to imagine a context in which the sentence could be uttered" (Heringer 1970: 291) is valuable.

However, it should still be noted that the questionnaire technique, though probably better than interviews, is itself not unproblematic. We are still dealing with made-up sentences, for instance, and, though there is a context of sorts, it is a far cry from a natural

context as it is found in real spoken or written discourse. In addition, Carden (1970b, in his follow-up discussion of Heringer's article) highlights the problem of such terms as 'acceptable' and 'grammatical', which would have to be defined clearly if the researcher wanted to be certain that all the informants judge according to the same criteria. If, for instance, informants find a sentence 'unacceptable', the researcher does not know the reasons for this judgement.[45]

Stokes (1974), in a study with the aptly chosen ambiguous title "All the Work on Quantifier-Negation Isn't Convincing", also opted for a questionnaire rather than the interview technique, but tried to avoid the problems associated with grammatical acceptability by having informants base their judgements on synonymity instead. Stokes' 48 informants included "27 undergraduates with no linguistic training, 12 law students and 9 graduate students with some linguistics training" (Stokes 1974: 700, footnote 4). Informants were instructed to "select those (lettered) sentences which could be interpreted as meaning the same as the given numbered sentence" (694). Stokes classified informants as NEG-Q, NEG-V or AMB according to their synonymity judgements of eleven NEG-Q paraphrases and eleven NEG-V paraphrases[46] for the sentence *All the boys didn't arrive*. This first test sentence was followed by another seven with four paraphrases each (two NEG-Q and two NEG-V)[47]. One of these contained an *until*-adverbial, one a positive question tag, and the rest were chosen "to test consistency of response" and "effects of possible semantic constraints on ambiguity" (694). One possible point of criticism of Stokes' study is that, once again, only made-up sentences are used, and this time without even a made-up context. Another problem is that informants are likely to get confused when having to judge as many as twenty-two paraphrases for the first test sentence. Further, in Heringer's study, test sentences were mixed with other sentences, but here it seems informants were only confronted with quantifier-negation constructions.

In Stokes' paper, we encounter a similarly confusing presentation of results as in Heringer's. Therefore, Stokes' data were again regrouped for the present purposes and are

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45 A further point of criticism is that the total of Heringer's informants is given as 59, while there is only a total of 53 informants if the figures in his table are added together. Heringer does not clarify why six informants are missing from the results. It is also problematic that 18 of Heringer's informants are professional linguists, whose linguistic intuitions may well be distorted and who may have a different understanding of acceptability. The problem of relying on linguistic intuition is discussed convincingly and in detail in Labov (1972a: 191f.).

46 However, the last four, given in Stokes as (s-v), are hardly valid paraphrases of the NEG-V reading, as they all involve two negations, which – at least in standard varieties – cancel each other out (for instance *None of the boys didn't arrive*).

47 The NEG-Q paraphrases are always of the form *not all* N V*ed* and *some* N *failed to* V, while the NEG-V paraphrases are of the form *all* N *failed to* V and *no* N V*ed*.

shown in Table 3. Interestingly, according to the results of test sentence (1), based on which informants were grouped as belonging to the NEG-Q, NEG-V or AMB dialects, there are roughly as many NEG-V speakers as there are NEG-Q speakers, but twice as many AMB speakers. (It should be noted, however, that this categorisation is based only on Stokes' paraphrase (a) for NEG-Q and paraphrase (m) for NEG-V. Looking at the average results for all the valid NEG-Q and NEG-V paraphrases taken together, 36/48 or 75% of informants accept NEG-Q paraphrases, but only 31.5/48 or 66% accept NEG-V paraphrases.)

Table 3. Number of informants accepting NEG-Q or NEG-V paraphrases or both (AMB) for eight test sentences (extrapolation from Stokes' data; N = 48)

TEST SENTENCE	NEG-Q		NEG-V		AMB	
(1) All the boys didn't arrive.	12	25%	11	23%	25	52%
(2) All of the boys didn't arrive, did they?	19	40%	11	23%	18	38%
(3) All the boys didn't arrive until midnight.	10	21%	10	21%	28	58%
(4) All the passengers didn't arrive.	18	38%	6	13%	24	50%
(5) All the guests didn't show up.	20	42%	7	15%	21	44%
(6) All the boys didn't menstruate.	10	21%	32	67%	6	13%
(7) The whole lake wasn't polluted.	19	40%	5	10%	24	50%
(8) All the boys didn't live.	20	42%	10	21%	18	38%

As in Heringer's study, the acceptance of the NEG-Q reading is higher with the positive question tag (sentence (2)), and only very slightly reduced with the *until*-adverbial (sentence (3)). Surprisingly, the NEG-Q acceptance for test sentences (4) and (5) is much higher, while the acceptance of NEG-V is reduced, although these two sentences are analogues of test sentence (1).

I would argue that the results for sentences (4) and (5) are in fact more revealing than those for test sentence (1) because informants are likely to get confused with the latter's twenty-two paraphrases.[48] But they can probably make fairly confident judgements regarding test sentences (4) and (5) with only four paraphrases.[49] Moreover, some of the twenty-two paraphrases are questionable because they are not synonymous with sentence (1) and convey additional implications; some of them are quite unusual (for instance, they

[48] Stokes (1974: 696) himself admits that "subjects become less consistent as they are given additional choice opportunities".

[49] But note that even for sentences (4), (5), (7) and (8) with only two paraphrases for each reading, informants did not treat the two paraphrases with the supposedly same meaning in a consistent way (cf. Stokes 1974: 700, note 5): in 19 of 164 NEG-Q answers, or 12%, informants chose just one of the NEG-Q paraphrases, and in case of NEG-V, as many as 34 of 115, or 30% chose just one of the NEG-V paraphrases. So while Stokes sees these results as evidence that his paraphrases are valid for the NEG-Q and NEG-V readings respectively, I find this line of reasoning questionable. Rather, it is an open question, especially in case of NEG-V, why informants do not treat the two paraphrases consistenly in such a high proportion of all cases.

contain multiple negatives). If it is correct that the results of test sentences (4) and (5) are more reliable, then it is in fact again the *until*-adverbial that markedly reduces NEG-Q acceptance, while no influence of the positive question tag can be observed.

A good move on Stokes' part is the inclusion of test sentence (6), *All the boys didn't menstruate*, which clearly shows the influence of world knowledge on the interpretation of ambiguous structures. Here the acceptance of the NEG-V reading is much higher with 67%, while it is surprising that the NEG-Q reading is accepted at all (the usual Q-based implicature of the NEG-Q reading *Not all the boys menstruated* being that some of them did menstruate). Perhaps informants accepting the NEG-Q reading for sentence (6) were not paying attention to the actual propositional content of the sentence because it does not occur in a real context and because there may be a certain 'habituation effect' when informants have to judge so many similar sentences. Another interesting case is test sentence (7), in which the quantifier *all* is replaced by *whole*. Even so there is no mention of the COLL reading (cf. chapter 1 and section 2.6), which is also completely ignored in all the other studies mentioned so far (i.e. those by Carden, Jackendoff, Heringer and Horn), apart from Taglicht (cf. section 2.6).

While Stokes argues that the NEG-Q, NEG-V and AMB dialects do in fact exist (especially since his procedure favours AMB), he also observes frequent crossing over between dialects, concluding that "even the existence of the dialects is suspect" (Stokes 1974: 696). Moreover, he suggests that educational background may have an influence, since law students and graduates with linguistic knowledge belong mostly to the AMB dialect (if this were true, Carden's 'randomly distributed dialects' would not be random after all). Further, while there is no confirmation of an 'out-dialect' as observed by Heringer, the latter's findings that the tag-question and the *until*-adverbial do not force the readings predicted by Carden are confirmed. Similarly, Stokes cannot find evidence for Carden's 'switch-dialects', since the switches he observed occurred in the opposite direction from that found by Carden. Stokes (1974: 697) thus rightly concludes that "the existence of specific dialects with respect to ambiguous sentences is very much an artifact of the research design employed" and that "subsequent research needs to consider intonation, stress, pause and other surface structure phenomena in order to arrive at a satisfactory model for the explanation of ambiguity involving negation in the presence of quantifiers." While these surface structure phenomena are sure to play their part in the disambiguation process, I would argue that contextual and world knowledge, whose role has generally been neglected in the literature, are the (probably most important) basis for any interpretation of the ambiguous structures we are concerned with.

Carden's postulation of different syntactic dialects or idiolects is likewise criticised in Labov (1972a), together with the assumptions underlying the use of intuitive data as a method of getting at LANGUE. Labov (1972a: 192) affirms that "the very existence of the concept 'idiolect' as a proper object of linguistic description represents a defeat of the Saussurian notion of *langue* as an object of uniform social understanding." As a reaction to Carden (1970a), Labov conducted a series of different studies "using various techniques" (Labov 1972a: 193), which are described in Labov (1972a and 1975). The combined results of these studies showed that, while a majority of informants "give initial NEG-Q responses" to sentences like *All the boys didn't leave*, "almost all subjects will in fact respond either NEG-Q or NEG-V when we control the context effectively" (Labov 1972a: 194). Moreover, subjects are not at all consistent in their judgments. In one task, subjects were presented with a diagram of empty circles, triangles and squares, and another identical diagram, in which one of the circles contained a dot. They had to choose which of the diagrams was designated by the sentence *All the circles don't have dots in them*. Now, "most subjects switch to NEG-V interpretations" (Labov 1972a: 194) and select the diagram without any dots. However, more subjects accept the NEG-Q reading if four or even seven out of eight figures contain a dot, instead of only one. Furthermore, Labov (1972a: 196) found that "there are more subjects who switch responses from sentences to diagrams than those who maintain a consistent position." From these and some other studies, Labov (1972a: 197) concludes that "the eliciting context can be controlled to produce NEG-Q and NEG-V 'dialects' at will." This is also nicely illustrated by the example of Labov's wife, who, in a discussion, could not be convinced of the existence of the NEG-V reading and was then observed to use the sentence *Simon, get up! Everybody's not helping!* (with a clear NEG-V meaning) the next morning. These findings show quite clearly that the NEG-Q and NEG-V dialects do not exist, that it is the context which strongly influences people in their acceptance of the readings, and that people's intuitions can be in stark contrast to what they actually say (or write) in everyday life – and therefore not a reliable source of data. The question remains why such idiolects were postulated and researched with considerable effort in the first place. Labov (1972a: 199) concludes that

> these dialects seem to be artifacts of a theoretical position. As linguists become more deeply involved in such theoretical issues, it is likely that their intuitions will drift further and further from those of ordinary people and the reality of language as it is used in everyday life.

I therefore agree with Labov (1972a: 199) when he proposes that "linguistics cannot continue to produce theory and data at the same time."

A researcher who seems to have worked with Labov at the time is Baltin, who in his 1974 paper proposed a principle that could account for people's divergent scope assignments observed by Carden (1970a and 1973). Baltin tried to show that there are certain factors beyond the syntactic or maybe even strictly linguistic level that determine the choice of specific readings. Baltin (1974: 31) starts by observing that the NEG-V reading logically entails the NEG-Q reading and therefore suggests the following principle or hypothesis:

> A: When there exists an ambiguity with a relationship of logical entailment between the readings, speakers can use this relationship to interpret the sentence.

To test whether the proposed principle generally holds true, Baltin also looked at another kind of ambiguity involving an entailment relationship between readings, namely that of prenominal modifiers, as exemplified in (17)a with its two readings given as (17)b and c (Baltin's (4)-(6)):

(17) a. The philosophical Greeks liked to talk.
b. The Greeks, who are philosophical, liked to talk. (nonrestrictive)
c. The Greeks who are philosophical liked to talk. (restrictive)

The nonrestrictive reading entails the corresponding restrictive reading, just as NEG-V entails NEG-Q.

Baltin argues that if Principle A is correct, NEG-V speakers should interpret (17)a in its nonrestrictive sense, choosing the entailing reading in both cases, while NEG-Q speakers should opt for the restrictive sense, preferring the entailed readings. To test this hypothesis, Baltin devised a clever experiment, which tested speakers by forcing them to use their knowledge of the language to perform a task.[50] This avoids the problems with intuition we encountered in the discussion of the interview and questionnaire techniques. Baltin's sixty-one subjects were presented with a total of thirty different sentences[51] as captions to pictures, and were told that they participated in a test of short-term memory. The test

[50] This is also advised by Labov (1996: 5), who says that "greater reliability can be achieved by having the subject carry out unreflecting semantic interpretations of utterances, rather than perform meta-linguistic tasks."

[51] Five exhibiting quantifier-negation interaction, five with pronominal modifiers, ten with an ambiguity of pronominal referent and ten unambiguous sentences.

sentences contained nonsense-nouns, such as *wug* and *zog*, to avoid any influences of world knowledge, for as Baltin (1974: 32) points out, "belief systems interact crucially with grammar." He illustrates this with sentences (18)a and b (his (7) and (8)):

(18) a. All men aren't 20 feet tall.
b. All men aren't 6 feet tall.

Sentence (18)a forces a NEG-V reading, while sentence (18)b forces a NEG-Q reading.

After the presentation of the stimulus sentence, subjects had to perform a simple arithmetic task and were then presented with a disambiguating question, ostensibly designed to test their recall of the sentence (Baltin 1974: 32). A sample task is shown in example (19):

(19) All the binks aren't hungry. (Task) Question: Jom is a bink, so can he be hungry?

"A 'yes' answer was scored as Neg-Q, a 'no' answer as Neg-V" (Baltin 1974: 33). According to their answers, informants were classified as either NEG-Q, NEG-V or 'switch-mode' speakers (when they did not give consistent answers to all tasks), and similarly as restrictive, non-restrictive or 'switch-mode'. Then a statistical analysis was performed, which tested whether NEG-Q preference is independent of restrictive preference (the null-hypothesis).

In short, Baltin was able to confirm Principle A by refuting the null-hypothesis with a chi-square of 41.32 ($p<.005$). He therefore concludes that NEG-Q preference and restrictive preference are not independent and that "entailment between possible readings is a principal determinant of quantifier-negative scope" (Baltin 1974: 34). Moreover, Baltin surmises that Principle A may be "a particular instance of a more general phenomenon known as category width" (34). According to Baltin (1974: 34),

> [c]ategory width […] is a phenomenon which divides members of the population into those who perceive the domain of a category very widely and those who perceive category boundaries very narrowly over a wide variety of perceptual tasks.

Baltin (1974: 34) concludes that "entailment between possible readings is a principal determinant of quantifier-negative scope". His results are certainly interesting and may indicate what factors influence informants' choice of certain readings. Unfortunately,

however, Baltin's statistics are on shaky ground: the validity of his chi-square test is questionable, since some of his figures are very low (five of his nine observed frequencies cells are below five). In order for a chi-square test to be valid, at least 80% of the expected cell frequencies need to be at least five, but in the present case this requirement is narrowly missed with 78%. In contrast to Baltin, I would therefore argue that his principle at best determines a preference for certain readings in case of isolated sentences. Baltin himself, with the examples in (18), makes clear that these preferences can be overridden by world knowledge or when ambiguous sentences occur in context. The context and/or world knowledge can force a particular reading, even if that reading is not the preferred one in isolation.

To summarise, it can be said that in the 1970s, the issue of the various readings associated with *all…not* constructions received considerable attention, sparked by generativist interest in the derivation of certain structures and the embarassment of so-called random syntactic dialects or idiolects. Although Carden's studies left much room for methodological improvement, it was thanks to him that *all…not* constructions were investigated more closely by other researchers using various methodologies. While many of these constituted improvements and yielded some interesting results concerning the frequency of the various readings and suggested reasons, all of them only ever addressed the interpretation of given (constructed) sentences. However, the question of how these constructions are actually used in real natural language remained open and can only be investigated with the help of large corpora. The advantages of a corpus linguistic approach include the naturalness of the data occurring in a real natural context, the lack of experimenter bias effects in the production of the data, and the extended scope both in terms of data as well as of informants. The corpus lingustic approach is therefore a good way for researchers to avoid producing theory and data at the same time, as called for by Labov (1972a: 199; cf. above).

2.6 Corpus linguistic studies

To the best of my knowledge, there are only two studies on quantifier-negation sentences that can be called corpus linguistic, both of them unfortunately unpublished. The first of the two was probably written around 1985 by Taglicht. Up to that point, researchers had focussed on the question of how people interpret *all…not* constructions, but they had failed to consider whether people in fact used these constructions, and if so, how often, in which sense and for what purposes. Taglicht explicitly criticises earlier studies concerned with

all…not constructions (by Carden 1970a, 1973a and b, 1976, Heringer 1970 and Stokes 1974) because "there was no attempt to discover if speakers actually used this type of sentence" (Taglicht ND: 10, note 5). Therefore, rather than performing interviews or devising questionnaires, Taglicht conducted a small-scale corpus linguistic study to check how often this type of construction occurs, and how it is interpreted in context. These are basically the same aim and method as those adopted in the present study.

Taglicht (ND: 1) describes the construction he is interested in as a "finite clause with operator negation (*alias* auxiliary negation) and with *all* as determiner or head of the subject NP." His example, which was already presented in chapter 1, is reproduced here as (20)a, and can be interpreted in not only two, but three different ways (paraphrased in (20)b-d:

(20) a. All the bills don't amount to $50.
b. Not all the bills amount to $50.
c. Not one of the bills amounts to $50.
d. The sum of all the bills does not amount to $50.

Sentence (20)b is the by now well-known NEG-Q reading, or what Taglicht also calls the weak distributive reading, (20)c is a paraphrase of NEG-V or the strong distributive reading, while (20)d represents the collective reading (COLL), which I introduced in chapter 1 and which is ignored in (almost) all the other literature on the topic.[52] Taglicht (ND: 10, note 6) also mentions that "*not all…* is used in older English, with the implication of 'not even all…'" and "may still occur sporadically in literary prose, as an archaism used for rhetorical effect."[53] It seems that both Jespersen's and Taglicht's attention was drawn to the COLL reading by Tobler (1902)[54], who was probably the very first to point out its existence more

[52] It is only mentioned briefly, but not discussed in detail, by Jespersen (1966 [1917]) with *not all* rather than *all…not* (cf. section 2.4). Although Taglicht is surprised that Carden, Heringer and Stokes completely ignored the COLL reading, it is symptomatic of their and other researchers' practice of using made-up sentences and relying on introspection; had the researchers in question investigated real sentences, they would most probably have noticed the existence of the COLL reading, which, as we will see below, is quite frequent.

[53] In fact, the COLL reading also occurs with *all…not* in Shakespeare, as in Macbeth (V, i, 40-41): *All the perfumes of Arabia / Will not sweeten this little hand* (thanks to Gunnel Tottie, who called my attention to this example).

[54] Jespersen quotes Tobler and Taglicht must have read Tobler as well, although Tobler does not figure in his bibliography. But Taglicht's example *All the bills don't amount to $50* cannot be a coincidence and is surely a translation of Tobler's *Tous ces objets ne coûtent pas 50 francs* (cf. section 2.4).

than a hundred years ago (cf. section 2.4). Other studies mentioning the COLL use of *all*, though not for *all…not* constructions, are Kroch (1979) and Beghelli and Stowell (1997).[55]

Taglicht notes that the COLL reading is (usually) the strongest of the three, followed by NEG-V, with NEG-Q being the weakest since COLL implies NEG-V, which in turn implies NEG-Q (cf. chapter 1 and 5). If not even the sum of all the bills amounts to $50, then none of the bills amounts to $50, and if none of the bills amounts to $50, it follows that not all amount to $50, but not vice versa (cf. example (20) above). Similarly, (21) implies that 'more is better' (COLL is the strongest reading), since "the greater the number of boys, the greater the likelihood that their combined strength will exceed the teacher's" (Taglicht ND: 3).

(21) All the boys (together) are not stronger than their teacher.

But Taglicht also gives examples of the rare situation in which this normal implication that 'more is better' is reversed to 'more is worse', which is illustrated by sentences (22)a and b. "The greater the number of aspirins (beyond some unstated reasonable amount), the less likelihood there is of their doing good, and the greater the number of interruptions, the more difficult the task becomes" (Taglicht ND: 3). In these two examples, the NEG-V and NEG-Q reading do not follow from the COLL reading.

(22) a. All those aspirins can't have done you any good.
b. All those interruptions didn't make it easier.

This observation leads Taglicht (ND: 3) to conclude that "an inference from or to a collective reading typically involves (or even necessarily involves) knowledge of the world." We will see later on that world knowledge generally plays an important part in the interpretation of *all…not* constructions. Taglicht (ND: 9, note 1) observes the same about sentences (23)a and b when he says that they "are strictly speaking ambiguous, and are disambiguated on the basis of extralinguistic knowledge."

[55] "[W]hen the universally quantified variable ranges over sets instead of individuals it is perfectly compatible with collective argument predicates" (Kroch 1979: 193), as e.g. in *All of the enemy armies are numerous*. Kroch also notes that *each* and *every* (being singular and distributive) cannot occur with a predicate like *surround* or with adverbs like *simultaneously* and *together* (Kroch 1979: 187 and 246f.) Beghelli and Stowell (1997: 88-89) note that "only *all* allows for a collective construal", in contrast to *each* an *every*, which are singular strong distributive quantifiers.

(23) a. All the angles of a triangle are 180°.
b. All the angles of a triangle are less than 180°.

Thanks to our mathematical education, we know that (23)a must be collective, while (23)b must be distributive to yield a correct statement. So with the example of (23), Taglicht nicely illustrates the importance of world knowledge for the understanding of potentially ambiguous utterances.[56]

In order to collect instances of *all…not* constructions that occurred in natural language, Taglicht surveyed three corpora: the Brown Corpus (American English), the Lancaster-Oslo-Bergen Corpus (LOB; British English), and the London-Lund Survey of Spoken English (LL; British). In approximately 2,500,000 words he found no more than twenty-one instances of the *all…not* construction (which amounts to 8.4 instances per million words), indicating that it is very rare indeed. Taglicht (ND: 6-7) states that "13 of these were clearly weak" (i.e. the NEG-Q reading), while there was "not a single clear example of the strong reading" (NEG-V). The rest (eight instances) were COLL. Taglicht did not find any spoken instances, either of the distributive readings, or of the collective reading. I will return to Taglicht's results in more detail in section 3.4.2 in a comparison with my own data. For the moment suffice it to note here that it is again the NEG-V reading that is the least frequent one, while the collective reading, which was ignored in all the other studies, is surprisingly frequent. The most important point is that Taglicht was able to disambiguate all of his instances, since these are naturally occurring utterances, which are placed in a textual and situational context. Thus, if there are no syntactic constraints restricting potential interpretations, world and contextual knowledge will, in the vast majority of all cases, be enough to clarify which of the readings is intended.

The second study relying on corpus linguistic data is Zhou's 2008 dissertation, which is mainly concerned with a proposal for a new kind of semantic model. Zhou (2008: 37) criticises the traditional "ambiguity-phobia" and proposes that semantics should include ambiguities instead: "a sentence, intuitively associated with various readings, should be semantically ambiguous among all the readings, instead of having the semantic meaning(s) arbitrarily decided due to theory-internal considerations" (Zhou 2008: preface). In addition to including ambiguities, this new semantics should also explain the prominence of certain readings of out-of-the-context sentences: "[T]he difference in the prominence of various

[56] Sentences (23)a and b are very similar to (18)a and b, which were provided by Baltin (1974), also as examples of disambiguation by world knowledge.

readings of a sentence should be accounted for in the semantics, rather than being ignored" (Zhou 2008: preface).

As far as the corpus linguistic methodology is concerned, Zhou used a collection of New York Times articles (1994-1996), totalling 173 million words. However, the focus of the study is not on quantitative results but rather on the proposed new semantics, so that there are not many figures to compare with.[57] Nevertheless the thesis is quite exceptional in that natural language data is used as the basis for a formal semantic study, and the work clearly profits from this empirical foundation by providing insights that would otherwise be inaccessible. Although Zhou's method of retrieval differs from mine, the analysis of the data was performed in a very similar manner: "The findings are about the intended readings of the potentially ambiguous sentences in their naturally-occurring contexts" (Zhou 2008: 39). Thanks to this method, Zhou arrived at some of the same or similar conclusions as will be presented in later chapters of the present study, concerning for instance the existence of underspecified sentences (cf. chapter 4.6) or the distinction between two different kinds of wide scope negation readings. Zhou calls them the *not every*-paraphrase and the *it's not the case that every…*-paraphrase, the latter being reminiscent of what I refer to as metalinguistic or external negation in chapter 4.6.

Zhou (2008: preface) also claims that "there is a rough correlation between how often an intended reading occurs in the corpus data and how prominent that reading is in a near-randomly constructed, out-of-context sentence". This is an interesting claim that could shed light on the relation between prominence of readings or maybe the salience of certain readings and/or constructions and their frequency of occurrence. As will be shown later on, my quantitative results – at least as far as English is concerned – seem to support this relation when compared to the results of the studies mentioned in section 2.5 (with all the necessary caveats concerning methodolgy). However, to find sound evidence of this kind of link, one would have to perform a study that combines a corpus linguistic part with a

[57] The only quantitative results relevant to the present study are as follows: when the quantifier is in subject position, NEG-Q occurs in 79/206 cases (38%) for *every* and in 91/297 (31%) for *all* (Zhou 2008: 54). With roughly 300 instances, Zhou's dataset for *all* in subject position is thus smaller than mine with roughly 500. Surprisingly, Zhou's NEG-Q frequency is thus much lower than Taglicht's and mine with over 50% (cf. chapter 3.4). Zhou (2008: 56) also notes that "a quantifier is more likely to be the intended target when it quantifies the object than when it quantifies the subject", which is shown in a comparison of several quantifiers occurring in either subject or object position in transitive constructions. This does not really come as a surprise, considering that in this case wide scope negation is identical with scope according to linear order. Zhou, however, attributes this result rather to the fact that the quantifiers in object position are part of the predicate and, according to Zhou (2008: 56), "predicates in general have a high affinitiy to sentential negation". Furthermore, the difference in NEG-Q frequency between Zhou's material and mine and Taglicht's could also be due to the New York Times style sheet.

methodologically challenging questionnaire testing the interpretation of out-of-context sentences as well as their relative prominence.

2.7 Information structure, stress and intonation

In the literature, discussions of quantifier-negation ambiguities are often accompanied by references to the disambiguating force of certain stress and intonation patterns. Although the present study involves no investigation of intonational features, this theoretical overview cannot ignore the literature concerned with intonation in its relation to *all…not* constructions, especially since stress and intonation are (often) closely connected to information structure, which forms the main topic of chapter 4.5. Intonation, and in particular the position of stress, usually interpreted as focus accents, are treated as a major or even the most important factor for the determination of information structure by many authors. Although the view that foci are derived from stress seems to be the most widespread one, there are also models that derive stress from focus-structure (for instance Jackendoff 1972 and Erteschik-Shir 1997). Even though I do not want to commit myself to a particular model, the latter view seems to be preferable in case written language is not to be ignored.

As far as quantifier-negation sentences are concerned, most authors mention them in the context of particular intonation contours that possibly or necessarily (depending on the author) disambiguate such structures. These contours are referred to by a number of different terms, for instance, for English, B-accent (Bolinger 1965, Jackendoff 1972), the fall-rise (Liberman and Sag 1974, Ladd 1980, Ward and Hirschberg 1985, Ertschik-Shir 1997), tune L+H*LH% (Steedman 1991 and 2000, mentioned in Gast 2010: 35), AC-profile (Bolinger 1986, mentioned in Gast 2010: 35) and rise-fall (Błaszczak and Gärtner 2005 on sentences like *They have (/)FORced us to turn down NO(\) one*.). For German, the terminology is equally confusing: I-Topikalisierung (Jacobs 1982, 1984, 1997), i.e. topicalisation by means of intonation (Jacobs 1984: 50), bridge accent or bridge contour (Büring 1997; Steube 2003), root contour or Wurzelakzent (Jacobs 1997, Gast 2010), hat pattern or Hutkontur (Jacobs 1982, 1997, Féry 1993[58]), rise-fall accent contour (Krifka 1998, Kiss and Gyuris 2003 [on German and Hungarian]).[59] It is not clear whether all these terms refer to the same, or merely to overlapping or similar contours, but all of them have been associated with *all…not* constructions in one way or another.

[58] In fact, Féry (1993: 149f.) even distinguishes two different hat patterns in German.
[59] Cf. Ward and Hirschberg (1985: 749) for even more names for the fall-rise contour.

As already mentioned, authors also differ in their views on the disambiguating power of a particular intonation and stress assignment. Some authors maintain that the NEG-Q reading is only available when some special intonation or emphasis is used (as, for instance, Lepore 2000 and Krifka 1998). Horn (1989: 229), too, claims that "high stress on the **A** word (*all, both, and*) and a final rise combine to yield the NEG-Q/~**A** reading, normal stress and a final fall are associated with the NEG-V/**A**~ interpretation." The association of contrastive stress or the fall-rise intonation with the NEG-Q reading is further mentioned in Davison (1978: 34), de Haan (1997: 175), Heringer (1970),[60] and Sahlin (1979: 129-130) for *any…not* (e.g. *Any grown-up couldn't do that*). The association of contrastive stress with NEG-Q is not surprising, since, as Labov (1972b: 802) points out, "contrastive stress normally focuses the semantic force of negation on the stressed particle so that the negative commands it." However, Horn (1989: 496) also states that "**no** special intonation is **required** to bring out the wide-scope reading of negation in, for example, *All is not lost* […]" (my emphasis in bold). Therefore, although contrastive stress or the fall-rise may force the NEG-Q reading, Beghelli and Stowell (1997: 96) are wrong when they claim that, in sentences like *All the boys didn't leave*, "the subject GQPs [group-denoting quantifier phrases] must scope over negation – at least on the neutral intonation", yielding only the NEG-V reading. As Horn's example shows, a NEG-Q reading can also be accessed with neutral intonation. The same claim is also made in some grammars (cf. section 2.2).

Whereas some claim that a neutral intonation can only be interpreted in the NEG-V sense, or that the neutral intonation is NEG-V but that a particular intonation leads to ambiguity (Krifka 1998), others maintain that a particular intonation necessarily disambiguates, with only the NEG-Q reading being possible, but that the structures remain ambiguous without this particular intonation (for instance Büring 2003). There is even the minority view that both readings are possible with this particular intonation (Erteschik-Shir 1997; Ward and Hirschberg 1985) or that a particular intonation is required for the NEG-V reading (Anderson [1973: Appendix I] claims that "in certain varieties of English" NEG-V is not possible "except perhaps with certain contrastive intonation contours"). Furthermore, authors also differ in their descriptions of the effect or function of the particular contours and how these functions lead to the disambiguation of *all…not* constructions. Major differences between authors are thus (a) the exact characterisation of the intonation contour, (b) the explanation of how disambiguation is achieved, usually based on more

[60] According to Heringer (1970: 193, footnote 6), Jackendoff (personal communication) noticed that AMB speakers get "a NEG-Q reading if the final contour is rising ("contrastive" stress) and a NEG-V reading if the final contour is falling ("emphatic" stress)."

general assumptions of the contour's function (such as to indicate a contrastive topic, contrast, contradiction, uncertainty with respect to an invoked scale, focus within a given set, contrastive/metalinguistic negation, partiality, context-changing sub-informativity)[61], and (c) which readings are possible or necessary with neutral and special intonation patterns, respectively.

Before reviewing the papers dealing most directly with *all…not* constructions, I want to point out some recurring general problems. First of all, there is the practical problem that the literature concerned is often highly formalistic (especially in those studies with a generative semantics background) so that it is not very accessible to non-specialists of this particular area of linguistics. Another problem is the abundance of terminology for identical, similar, overlapping or related phenomena,[62] with the ensuing definitional difficulties. But at least one conclusion can be drawn from this problem: Although the idea is widespread that intonation can play an important part in disambiguating ambiguous structures, in particular *all…not* constructions, the exact nature of this intonation seems to be hard to pin down and the precise explanation of how this intonation achieves disambiguation is a matter of controversy. A third problem is of a methodological nature. Almost all the studies concerned with intonation and/or information structure rely entirely on made-up sentences, which is particularly surprising when intonation is at issue.[63] Moreover, many authors use the same constructed examples over and over again (such as *Fred ate the beans*, or in the case of *all…not* constructions, *All the men didn't leave* or *Alle Politiker sind nicht korrupt*). In many cases, examples consist almost exclusively of question-answer pairs because this makes it easier to pinpoint categories such as topic and focus. Although this may be an understandable procedure for expository purposes, one cannot help but wonder whether the discussion of the same few constructed and structurally unvaried examples, usually with an intonation contour supplied from

[61] More proposed functions of the fall-rise are cited by Ward and Hirschberg (1985: 751), for instance signalling reservation, incompletenes or 'up-in-the-airness', or "selection of a variable form the background".

[62] For instance, Liberman and Sag (1974: 425) complain that many similar contours "have been conflated with the contradiction contour by one investigator or another".

[63] Gast (2010), a comparative investigation of the English fall-rise and the German hat- or root-contour, both of which are often mentioned in relation to *all…not* constructions, is a notable exception in that the author uses corpus data from the BNC and IDS.

introspection,[64] can yield valid insights.[65] But let me put these issues aside for the moment and turn to a more detailed discussion of the relevant literature. I will again proceed chronologically, as later studies tend to be reactions to earlier ones.

The starting point is, once more, Jackendoff 1972 (cf. chapter 2.5), who deals with intonation in its relation to one of the elements of his model of semantic interpretation, which he calls *focus and presupposition* (1972: 16), and which is basically synonymous with focus structure or information structure. Jackendoff treats the fall-rise intonation contour associated with the NEG-Q reading as a (contrastive) B (pitch) accent, which "defines an *independent variable*" (1972: 262; original emphasis). The B accent is therefore usually found on the topic. In sentences where the B accent is associated with a single focus, Jackendoff (1972: 264) treats the affirmation-negation distinction as the dependent variable. According to Jackendoff (1972: 354), "the B accent coupled with negation means that the focus is an incorrect value to satisfy a positive presupposition; the A accent [= fall] coupled with negation means that the focus is a correct value for a negative presupposition."[66] In other words, for the sentence *ALL the men didn't go*, the B accent on *all* induces the interpretation that "some number of men went, but *all* is not the correct number" (356), resulting in the NEG-Q reading. With the A accent on *all*, by contrast, the meaning is that "some number of the men didn't go, and *all* is that number" (357). Jackendoff's approach of treating "the determination of scope relations in sentences" with quantifiers and negation "and the derivation of their intonation, as part of the same system" (Liberman and Sag 1974: 417) has been frequently criticised by later authors for various reasons, which are, however, of no direct concern here.

Liberman and Sag (1974) are also concerned with the intonation pattern associated with the NEG-Q reading. They claim that the sentence *All the boys didn't come* with a rising very high pitch on *all* and a final rise on *come* "strongly favors the 'neg-q' reading" (417). However, in contrast to Jackendoff (1972), who considers this pitch contour to be seman-

[64] A further exception are Ward and Hirschberg (1985), who, in addition to constructed examples, use a collection of authentic instances and spectrogram analyses. The latter is also true of Féry (1993).

[65] To check how representative examples like *All the men didn't leave* are of naturally occurring *all…not* constructions, I counted the number of this type of sentence in the BNC dataset, i.e. cases where *all* is a predeterminer followed by a simple plural NP and where the sentence contains no complicating factors like adverbs, other quantifiers, *if*-clauses, more than one negation etc. Although I did not even exclude subclauses, there are only 35 to 56 (in a very generous count) of such cases in the whole dataset. This amounts to only 7% (or 11%) of all instances. Moreover, about one third of these occur with the copula instead of a full verb and could be argued to represent different cases than the ones used in the literature. The many different types of naturally occurring *all…not* constructions can thus not be said to be adequately covered by the example sentences used in the literature, and the general applicability of the conclusions drawn from the latter's study is therefore doubtful.

[66] Note that Jackendoff (1972: 16) uses the term *presupposition* in the sense of 'Common Ground': "the information in the sentences that is assumed by the speaker to be shared by him and the hearer."

tically contrastive and centred on a specific element in a sentence, Liberman and Sag (1974: 419) argue against Jackendoff's "assumption that the initial high pitch in such sentences must reflect a contrastive focus." Rather, they (1974: 420) think "that it is a pragmatic utterance-based contour, unrelated to contrast." I will not go into a detailed phonetic characterisation of this holistic contour or describe Liberman and Sag's evidence for arguing against Jackendoff's contrastive interpretation. Of greater importance here is to consider for what purposes this contour is used. Liberman and Sag (1974: 421)

> find that this contour is appropriate (although of course optional) just when the speaker is using the utterance which bears it to contradict – he may contradict what has just been said by another, he may contradict some assumption or implication of what has been said or done by another, or he may contradict himself.

If these claims are correct, we should expect the NEG-Q reading (which is the one derived from the contradiction contour) to occur (mainly) in such contradictions in the corpus material (I will briefly return to this issue in chapter 4.6; cf. also Tottie and Neukom-Hermann 2010: 168). Why it is the NEG-Q and not the NEG-V reading that tends to be available with the contradiction contour is explained by Liberman and Sag (1974: 422-23) as follows:

> If a sentence containing a negative is used as a contradiction, it's natural to adopt an interpretive strategy which takes the negative itself to be the vehicle of that contradiction, i.e. to assume that what is being contradicted can be discovered by simply removing the negative particle from the sentence in question. This will guarantee that the negation will take wide scope with respect to any other operators in the sentence.

This amounts to what I will refer to as external or metalinguistic negation in chapter 4.6: a type of negation that has scope over the entire rest of the sentence, including other operators such as the quantifier.

Liberman and Sag do not treat this effect of the contradiction contour as a semantic one. It must be noted that in actual language use these phenomena will always occur in a pragmatic context – and will in turn be influenced by that specific context. Liberman and Sag (1974: 423) themselves emphasise this point when they state that

> by our theory this [wide scope negation] should be merely the result of a plausible chain of reasoning, or of a natural psychological strategy, so that the implicature should be contextually cancellable.

It is for this reason that they call the intonation contour in question a "pragmatic utterance-based contour" (Liberman and Sag 1974: 420).

The fact that the intonation contour we are concerned with is context-sensitive is also noted by Ladd (1980), although he criticises Liberman and Sag for identifying this contour as a contradiction contour, rather than the fall-rise contour. According to Ladd, these two contours should be distinguished, although they can be very similar and although "cases of actual ambiguity between the fall-rise and the contradiction contour" (152) can be found. A number of convincing arguments for this distinction, together with a detailed characterisation of the fall-rise, can be found in Ladd (1980: 147-152). Here, however, I am more interested in Ladd's analysis of the meaning of the fall-rise, in his claim that this intonation contour forces the NEG-Q reading of *all…not* constructions, and in his explanation of how this reading is derived from the fall-rise. Ladd argues for a specific meaning of the fall-rise (ˇ), which is illustrated in examples (24) and (25) (from Ladd 1980: 153):[67]

(24) A: Did you feed the animals?
B: I fed the ˇcat.

(25) A: Do you want a glass of water?
B: I'll have a ˇbeer.

Ladd (1980: 153) suggests that

> [i]n all of these sentences there is a narrow focus, but the fall-rise tone adds the information that the variable of the focus presupposition is a member of a set which is in the context. The meaning of fall-rise is thus something like *focus within a given set*. It picks something out of a set of possibilities and focuses on it, but it specifically notes the connection of the set of possibilities to the context.

In other words, in example (24) speaker B implies that, from the group of all possible animals, he fed only the member 'cat', but not, for instance, 'dog' or 'horse'. Similarly, in example (25), speaker B says that from the group of possible drinks, he would prefer a 'beer' instead of 'water'. In this second example, the group of drinks is not directly mentioned by speaker A (as is the case with the group *animals* in example (24)), but the "higher element in the hierarchy need not be explicitly mentioned in order to be in the context" (Ladd 1980: 154). Indeed, Ladd stresses the fact that "without specification of shared assumptions between speakers, the higher element – and thus the nature of the set-in-the-context signalled by fall-rise, may be unclear" (154). Although Ladd talks of a semantic meaning of the fall-rise, in other words, this meaning can only be derived by speakers and hearers with an understanding of the particular context, shared assumptions

[67] Unfortunately, Ladd also uses only made-up examples, but in contrast to other researchers, he always acknowledges the fact that the meaning varies according to particular contexts.

and world knowledge, which means that there is a crucial pragmatic component. This is why Ladd emphasises that the fall-rise "signals a connection to the context" (153).

But what about our *all…not* constructions? Why is it that the fall-rise forces the NEG-Q reading? Ladd argues that, while the fall-rise "permits us to put things in loose sets", "it can also be used […] to signal set and proper subset, hypernym and hyponym" (159). For the use of the fall-rise with quantifiers, it is important to see that quantifiers form a hierarchy of sets and subsets, also referred to as ordered scales (e.g. *all* > *most* > *few*). The fall-rise is used when the quantifier indicates a subset, as in example (26):

(26) A: Have you seen our books?
B: I've `got a ˇcouple of them.

The salesperson A in example (26) refers to all the books in the shop, and B indicates that he bought a subset of them. But in example (27), where B meets a friend on the way out of the bookshop, *a couple of them* is not a subset of the set in the context (*one of their books*) and therefore it is not the fall-rise that is used, but simply a falling accent.

(27) A: I see you bought one of their books.
B: I bought a `couple of them.

According to Ladd (1980: 160), we can now explain how the two meanings of *all…not* sentences are derived:

> In ˇ*All the men didn't go*, the quantifier is tagged as a subset – but there is no quantifier of which *all* is a subset, so the quantifier associates with the negative, and we get *not all*, which of course can be a subset of *all*. With the fall, on the other hand, *all* is not identified as a subset, and the negative does not associate with it.

Ladd's analysis of quantifier-negative scope distinctions is convincing, but he also argues that "scope of negation is **not always** specified" (162, my emphasis). It is only "the message of focus within a given set" which is specified by the fall-rise and "it is inferences based on this meaning that give us clear scope differences in certain cases" (162). This leads Ladd to the conclusion that Jackendoff's "elaborate logico-syntactic device" (1980: 162) for the analysis of quantifier-negation scope is not necessary. In addition, he rejects the latter's assumption that scope relations, together with their appropriate intonation contours, are specified by deep structure.

Ladd's semantic-pragmatic analysis is persuasive not only because it explains the derivation of the NEG-Q reading from the fall-rise, but also because it can account for other scope differences as well, for instance those illustrated in examples (28)a and b:

(28) a. John doesn't drink because he's unˇhappy.
b. John doesn't drink because he's un`happy.

The fall-rise in (28)a focuses on 'unhappy' as one reason out of a possible set of reasons for John's drinking, so that, in combination with the negation, we infer that John drinks, but not because he is unhappy. In (28)b, on the other hand, "there is no reference to other reasons and we have no cause to interpret the scope of the negative as being outside its clause" (Ladd 1980: 161). Thus, Ladd's analysis does justice to the fact that the effects of fall-rise on scope of negation can be obtained whenever "the meaning of the fall-rise, the negative, and the focused item fit together in an appropriate way" so that they are "not merely a function of quantifiers or even of particular quantifiers" (161). However, Ladd's insightful analysis does not explain why the NEG-Q reading can also be accessed without the fall-rise and in written discourse, where no disambiguating intonation is available. Based on his analysis we may speculate that, when *all…not* sentences are interpreted as NEG-Q in writing or without the occurrence of the fall-rise, the reader or hearer is able to infer that only a subset of *all* can be meant thanks to the context and/or world knowledge.

The decisive importance of the context is also acknowledged by Ward and Hirschberg (1985), who studied the fall-rise contour following Jackendoff, Liberman and Sag, and Ladd. They conclude that "what disambiguates sentences involving quantifiers and negation is context, not FR [the fall-rise contour]" (771). Although they agree with Ladd in many respects (for instance the phonetic description of the contour and the latter's criticim of Liberman and Sag), they argue against Ladd's proposal that the contribution of the fall-rise is to indicate 'focus within a given set'. Rather, they "claim that a speaker's use of FR conveys uncertainty about the appropriateness of some utterance in a given context – specifically, about some salient relationship between discourse entities, including (but not limited to) Ladd's set-membership" (756). They go on to specify these salient "relationships that provide the basis for the felicitous use of FR" (757) as those that can be represented as partially ordered sets or scales, which also accommodate Ladd's simple and hierarchical sets (758). The primary discourse function of the fall-rise is then to convey the speaker's uncertainty about his/her use of the perceived scale (764), and this uncertainty may in turn be used "for purposes of politeness, irony, or deference" (765). Ward and

Hirschberg are certain that it is this discourse function which distinguishes the fall-rise from "both falling intonation and A-rise" (767), as all three can also pick out a member of a set or select a variable from the background.

Section 4.2 in Ward and Hirschberg's article is then concerned with the alleged disambiguating power of the fall-rise when it comes to *all…not* structures. They "argue that it is not FR, but context or other co-occurring linguistic phenomena, that perform these functions" (770). Although the uncertainty conveyed by the fall-rise can contribute to the disambiguation of *all…not* constructions, Ward and Hirschberg (1985: 770) affirm that "context can favor a narrow-scope reading [i.e. NEG-Q] even WITHOUT FR." Moreover, they even endorse the rare view that "context can also favor a wide-scope reading [i.e. NEG-V] WITH FR (770). Despite the differences between Ladd's and Ward and Hirschberg's opinions, the latter support Ladd's view that intonation makes an independent contribution to utterance interpretation, a debated issue at the time. However, Ward and Hirschberg place the contribution of the fall-rise contour in the realm of pragmatics, rather than that of semantics, which is restricted to truth-conditional aspects of meaning (773). They see this contribution as a type of conventional implicature, as the "uncertainty implicated by FR is neither cancelable nor non-detachable" (775).[68]

To sum up the contributions by Liberman and Sag, Ladd, and Ward and Hirschberg, I agree with the latters' view that the fall-rise contour cannot be responsible for the disambiguation of *all…not* constructions. As Horn (1989: 545, note 19) notes "fall-rise, though a sufficient condition for triggering the NEG-Q reading, is not a necessary condition", so that "any general account of the *all-that-glitters* phenomenon must extend well beyond the ups and downs of the fall-rise contour" (231). At least in written language, the context must supply all the necessary information for reading a sentence with an appropriate intonation contour, as well as for its disambiguation. As for the partly over-lapping opinions of the above authors and their remaining differences, I cannot judge whether they are really concerned with the same phenomenon. As Ward and Hirschberg (1985: 753) note, Liberman and Sag's contradiction contour with contrastive stress is not the same as Ladd's fall-rise. Whatever the case may be, it seems to me that their various

[68] Detachability and non-cancelability are two diagnostics for conventional implicatures. If the implicature is detachable, "it will not necessarily be conveyed by distinct, truth-conditionally equivalent expressions" (Ward and Hirschberg 1985: 774). A conventional implicature cannot be denied or canceled "without producing an apparent contradiction."

positions may not be incompatible with one another.[69] Perhaps what they describe are related and partially overlapping phenomena and different possibilities of disambiguating *all…not* constructions. In fact, it is possible that Ladd's fall-rise is the appropriate intonation contour for the NEG-Q cases I call contrastive in chapter 4.5, while Liberman and Sag's contradiction contour would be appropriate for the cases I call external or metalinguistic in chapter 4.6 (as already hinted at above). The fact that there appear to be cases of ambiguity between these two contours would then be compatible with my finding that it is not always possible to choose between a contrastive and a metalinguistic analysis (cf. chapter 4.7).

Another author who discusses the fall-rise in connection with *all…not* constructions and even with metalinguistic negation is Erteschik-Shir (1997). She finds that an A-accent or falling intonation leads to what Horn (1989: 15) calls (predicate) term negation and thus a NEG-V reading. In fact, the sentence in such cases "is assessed as any nonnegative sentence", such as for instance *Peter$_{TOP}$ is [not-bald]$_{FOC}$* or *[All the men]$_{TOP}$ [not-go]$_{FOC}$* (Erteschik-Shir 1997: 100 and 178). This case, according to Erteschik-Shir, does not involve metalinguistic negation. However, she claims that this reading "is hard to get for most speakers. Only a few speakers (or dialects) allow term negation, it seems" (Erteschik-Shir 1997: 178). In contrast to the falling intonation (Jackendoff's A-accent), the fall-rise (Jackendoff's B-accent) "must be uttered in a metalinguistic context" (Erteschik-Shir 1997: 178) and forces a contrastive interpretation. According to Erteschik-Shir (1997: 121), "contrast is by definition metalinguistic",[70] and since "[m]etalinguistic negation has the effect of sentence negation" (120), she assigns the NEG-Q reading to such cases. However, her explanation of how the NEG-Q reading is derived is not convincing. Erteschik-Shir's (1997: 178) procedure is as follows: she assigns an f-structure (focus structure) to the positive version of the sentence in question (for example *ALL the men didn't go -> [ALL$_{FOC}$ the men$_{TOP}$]$_{TOP}$ [went]$_{FOC}$*). She claims that because *the men* is topic and the quantifier forces a distributive reading, all the individuals in the topic set have to be assessed separately. Then, if the assessment is that some of the men went and some of them did not go, the positive version is false. And because negation reverses the truth value of the sentence, the negative version, that is the *all…not* example, is true. Her claim is, then, that

[69] The compatibility of the different proposals also emerges in Steedman (2000: 663), who argues that an aswer with the L + H* LH% contour states nothing but a theme (without rheme) and so introduces "a new rheme alternative set", which is essentially the same as Ladd's analysis of the function of fall-rise as "evoking a set of alternatives" (Steedman 2000: 663). From the fact that no rheme is provided, Steedman derives the effect (noted by Ward and Hirschberg) of conversationally implicating uncertainty.

[70] For a different view on contrast and metalinguistic negation, cf. chapters 4.5 and 4.6.

because the truth value of the *all…not* sentence is true in case some of the men went and some did not, the NEG-Q reading is derived.

There are several problems with this kind of explanation. First of all, it seems to be cognitively inadequate. The claim that people interpret a negative sentence by first analysing and assessing its positive counterpart and then reversing truth values is rather unconvincing. Secondly, the same argument could be made in case the assessment of the positive sentence comes out as 'none of the men went'. In this case the truth value of the positive version is also false, but the negative version would have to be interpreted in the NEG-V sense. Erteschik-Shir's argument therefore does not adequately explain how the NEG-Q reading is derived.

Although, as has been mentioned above, Erteschik-Shir contrasts this derivation of the NEG-Q reading (metalinguistic fall-rise intonation and predicate denial) with the derivation of the NEG-V reading (non-metalinguistic fall intonation and term negation), she at the same time thinks that this non-metalinguistic NEG-V interpretation is hard to access for most speakers. Rather than accessing NEG-V non-metalinguistically via term negation, "this reading can be derived with sufficient metalinguistic clues as well" (Erteschik-Shir 1997: 179). So, in contrast to most other authors, who think that the fall-rise induces NEG-Q readings, Erteschik-Shir (1997: 152) argues that "getting both wide and narrow scope readings with metalinguistic fall-rise intonation is to be expected."

For various reasons, I do not agree with these statements. First of all, if it is true that most people find a non-metalinguistic interpretation of *all…not* constructions with falling intonation hard to get, it is not clear how else people would interpret such sentences, if not as NEG-V. The other reasons for our disagreement are, it seems to me, at least partly due to diverging definitions of terms and an unfortunate example sentence. Erteschik-Shir's claim that the NEG-V reading is available in metalinguistic contexts is due to her definition of contrast as being necessarily metalinguistic. Secondly, the example presented (quoted from Ward and Hirschberg[71]) is unfortunate. It is given here as (29).

(29) A: The foreman wants to know which union meeting some of the men missed.
B: \All/ the men didn't go to the last one.

[71] It should be noted that Ward and Hirschberg use this (constructed) example (their (75)) to demonstrate that NEG-V readings can also occur with the fall-rise, but they do not link this to metalinguistic use in any way.

Erteschik-Shir (1997: 151) argues that "[h]ere *some* is eliminated as the incorrect value of relevant men and it is replaced by *all*." Although I agree that this example involves contrast between the two quantifiers, I would not call this example metalinguistic, let alone a case of metalinguistic negation. In fact, the negation in the sentence uttered by B is term negation – precisely the case that Erteschik-Shir does not want to illustrate here. The predicate *miss* used by A is taken up again by B as its synonym *not go*, so that I would argue that the predicate functions as the given information (or what Jackendoff 1972 would call presupposition) rather than as the focus in this case. There are similar examples in my corpus data, such as (30) (this example is also discussed in section 4.3).

(30) I found it most questionable that **Forward Publishing**, having won fifteen awards – including a class winner – was not mentioned once throughout the whole ceremony. Had it been the form that ***all*** **agencies** were *not* mentioned, this may have been acceptable, but to be forced to listen to a litany of other agency names – not least Barkers Trident – without a single mention of our own was deplorable. [HAK:64; my emphasis; NEG-V]

As in example (29), the predicate, here *not mentioned* (underlined), is reiterated and the quantified NP *all agencies* is contrasted to the agency *Forward Publishing* mentioned in the preceding sentence (both shown in bold print). Two more examples of this kind are presented in chapter 4.5.

To conclude, Erteschik-Shir argues for a minority view of the relation between the fall-rise intonation contour and *all…not* constructions. She claims that with the 'normal' falling intonation the NEG-V reading is hard to access, but does not say how else *all…not* sentences with falling intonation can be interpreted. Sentences with the fall-rise, according to Erteschik-Shir, involve contrast and are therefore metalinguistic. In these cases, both the NEG-Q and the NEG-V reading are available, but the explanation of how the readings are derived is unsatisfactory. Moreover, if both readings are possible with the fall-rise, this intonation contour cannot be regarded as a disambiguating factor of *all…not* constructions, as is often claimed. I agree with Erteschik-Shir's view that cases involving metalinguistic negation can in principle be interpreted as either NEG-Q or NEG-V, but I also maintain that they will usually be interpreted as NEG-Q for reasons to be explained later. Moreover, contrastive cases are usually NEG-Q (depending on where exactly the contrast is placed), but contrast is not necessarily metalinguistic (cf. chapters 4.5-4.7).

The authors discussed so far are all concerned with the particular intonation that disambiguates English *all…not* sentences, although it is not always clear whether and to

what extent their results could be generalised to other languages. Liberman and Sag (426), for instance, are concerned with the contradiction contour in English, but assume that "stress-timed languages like English, German and Russian will tend to" exhibit something similar in their "set of discourse-functional intonations". German does indeed have an intonation contour similar to the English fall-rise, which is also discussed in relation to scope inversion. This German contour is referred to by various terms, as has been mentioned above, for instance i-topicalization, hat contour, root contour, bridge accent or rise-fall.

The English and the German contour seem to have the same effect when it comes to *all…not* constructions in that they both bring about NEG-Q readings. However, several authors note that the English and German contours are not exactly the same as far as their phonetic characterisation and their semantic and/or pragmatic effects are concerned. Jacobs (1997: 123), for instance, notes that prosodically the fall-rise does not entirely coincide with i-topicalization in German. He also gives some examples to show that not all cases of German i-topicalization can be translated into English sentences with parallel syntactic structure. However, this failure may be due to other differences between English and German, rather than the differences between the fall-rise and i-topicalization, such as different position of the finite verb or the awkwardness of fronting objects in English. Krifka (1998: 82) claims "that the scope inversion in English […] is more restricted and of a different nature than scope inversion in German" because in English "it is crucial that the second element is negation", while in German scope inversion under the rise-fall contour also occurs in cases "that involve two quantifiers." On the other hand, when it comes to the semantic/pragmatic effect of the intonation contours in question, it is the German contour that seems to be more restricted. Gast (2010: 44) claims that the German hat contour is more specialised in that it is a specific marker of context-changing sub-informativity, whereas the English fall-rise has the more general function of marking partiality, which covers sub-informativity. Authors who have written about the German rise-fall contour, according to Krifka (1998: 81f.), include Jacobs (1982, 1983, 1984), Lötscher (1984), Löbner (1990), Féry (1993), Höhle (1991) and Büring (1994, 1997). In what follows, I will consider the contributions by Büring (1997), Jacobs (1997) and Krifka (1998) in more detail.

Büring (1997) discusses the role of two different accents for the disambiguation of *all…not* sentences and negated modal verbs in German (TOPIC ACCENT has rising pitch

indicated by /, and FOCUS ACCENT has falling pitch \).[72] While a topic accent on *alle* 'all' and a focus accent on *nicht* 'not' combine to yield a NEG-Q reading, as illustrated in (31), the NEG-V reading is available, or even preferred, with the accent patterns illustrated in (32)a-c (sentences quoted from Büring 1997: 175 and 180):

(31) /ALLE Politiker sind NICHT\ korrupt.
all politicians are not corrupt

(32) a. ALLE\ Politiker sind nicht korrupt.
b. alle Politiker sind NICHT\ korrupt.
c. alle Politiker sind nicht korRUPT\.

Büring's aim is to explain why the NEG-V reading is not available with the so-called BRIDGE ACCENT, i.e. with a rising topic accent on *alle* and a falling focus accent on *nicht*. He argues that the topic accent must induce at least one disputable proposition in a given context, otherwise the sentence (i.e. the syntactic structure with the topic accent) is infelicitous. "[A] disputable set of propositions corresponds to a question whose answer is neither entailed nor excluded by the Common Ground CG" (Büring 1997: 183). This is illustrated by his example (14), given here as (33):

(33) A: Where were you at the time of the murder?
B: $[I]_T$ was at $[HOME]_F$.
Residual Topic: Where was the gardener?

In (33), the topic marking of *I* is not really necessary, but "indicates that there are disputable alternatives to *I* wrt to [sic] their alibi" (Büring 1997: 179). Without the topic accent, A's question would be fully answered, but the topic accent indicates alternatives for *I*, such as *the gardener*, and so insinuates that other people were not at home. As far as *all…not* constructions with the bridge accent are concerned, Büring shows that the NEG-Q reading induces disputable propositions. For example, the set of disputable propositions of sentence (31) in the NEG-Q sense include *some politicians are corrupt* and *no politicians are corrupt*, as these are neither entailed nor excluded by *not all the politicians are corrupt*. NEG-Q is therefore a possible reading of example (31). On the other hand, the NEG-V reading does not leave any propositions disputable and is therefore not a valid

[72] Büring (2003 and 2007) are good background reading, as they expound Büring's general position on information-structural categories, definitions and mechanisms.

interpretation of (31) with the bridge accent. While most of Büring's examples are German, the inclusion of one English example (his 16b) suggests that his explanations are intended to be valid for English as well. Moreover, it seems that Büring's explanations are not only valid for *all…not* constructions, but are also able to make the correct predictions about sentences with other quantifiers or other focal elements. Büring's model is an explanation of the pragmatic effect of the bridge contour. According to this model, the bridge accent does not exclude particular readings, such as NEG-V, a priori; rather, ambiguity is in principle still possible, but certain readings are blocked if they leave no disputable propositions.

While both Jacobs and Krifka acknowledge the pragmatic effects of the bridge accent described by Büring, Krifka (1998: 84) criticises Büring for the assumption that sentences with neutral intonation are ambiguous, although, according to Krifka, the literature commonly assumes that such sentences are interpreted as NEG-V.[73] Krifka proposes an explanation of the observed facts by formulating scoping rules and rules of focus that apply during the derivation of the sentences in question and result in scope inversion. Krifka (1998) acknowledges Jacobs' criticism of Büring (1994, 1997) and of Krifka (1994), in which he did not distinguish the root contour from another pattern with a simple rise on the first accent and a fall on the second accent. Krifka (1998: 84-85) agrees with Jacobs that these two should be kept apart. Although "the first accent" of the root contour "can be pronounced with a simple rise, especially in rapid speech, the phonological target is clearly a fall followed by a pronounced rise." The root contour can thus easily be mistaken for or collapsed with complex foci.

Jacobs (1997) in turn criticises Krifka's model because it predicts scope ambiguity for sentences with i-topicalization, although the latter only allow scope inversion. Jacobs claims that his analysis of i-topicalization is superior to Krifka's, as well as to Büring's, in that his inclusion of an illocutionary operator enables the restriction of i-topicalization to certain illocutionary types.[74] According to Jacobs, i-topicalization in German can only occur in assertive or directive contexts. Although he includes Büring's filtering condition in his model, Jacobs (1997: 108) thinks that it is the bridge contour itself, or what he calls i-topicalization, which triggers scope inversion independently of the pragmatic factors noted by Büring.

[73] Jacobs (1997: 120) proposes that the preference for scope according to linear order with neutral intonation could be motivated by iconic principles or principles of economy.

[74] For the precise technicalities of this proposal, the interested reader is referred to Jacobs (1997).

To sum up, we have seen that many authors have commented on the effect a particular intonation contour may have on the interpretation of *all… not* constructions (and other cases of scope ambiguity). However, this very general point is virtually the only one on which they concur. There is no agreement, for instance, as to the exact phonetic characterisation of the contour in English and German, respectively. Neither is there agreement when it comes to the semantic or pragmatic effect of the contour, let alone whether the English and the German contour have the same effects – although Féry (1993: 149) notes "that there is a striking similarity between some uses of the rise in German and the fall-rise in English." Finally, the proposed models vary greatly in their technical details, depending on the author's theoretical background (syntactic derivation, semantic interpretation or pragmatic mechanisms).

However, their common starting point is the observation of a particular intonation, which they set out to explain. Their approach is in a way opposite to the one taken in the present study. Büring, for instance, claims that topic and focus marking "determine the set of contexts in which the sentence can be uttered" (Büring 1997: 177). This almost suggests the existence of ready-made sentences (including topic and focus marking), waiting 'in limbo' for the appearance of a suitable context in which to be uttered. I would turn Büring's statement around and rather say that a particular context can or must induce certain accent patterns. In addition, topic and focus marking in Büring's framework and many others seem to be realised exclusively as intonational features and thus restricted to spoken sentences. These approaches are therefore difficult to adapt to written language. The focus on certain intonation patterns and their effects can certainly yield valuable insights. But the results of the present study, which tries to answer the question how naturally occuring, mostly written, sentences are disambiguated in context, show that the situation is far more complex and that intonation can at best only be one factor among many. Moreover, as written language (generally)[75] lacks prosodic features, these must necessarily be recoverable from other contextual clues. Therefore, despite Féry's (1993: 153) claim that "the way the accents are realized is in some cases the only method the speakers have at their disposal to disambiguate ambiguous sentences", I will show (in chapter 4.5) how information-structural notions can indeed be applied to the issue independently of intonation, and can thus serve as explanations even for written sentences.

[75] Some prosodic features are of course mimicked by typographical means, such as punctuation marks and in some cases italics etc., but these means are much less subtle than actual intonation.

2.8 Psycholinguistic studies

Let us finally turn to a completely different branch of linguistics. In the last fifteen, and especially the last ten years, there has been remarkable interest in the scope phenomena associated with quantifiers and negation in the language acquisition literature. It seems that this interest was first sparked by Musolino (1998), who is concerned with the acquisition of quantifier-negative scope by children. This study was followed by a series of publications responding to Musolino's results, trying to reproduce and/or contradict his findings and conclusions (Musolino et al. 2000, Lidz and Musolino 2002, Musolino and Lidz 2003, Gualmini 2004, Gennari and MacDonald 2005/2006, Gualmini 2005/2006, Musolino and Lidz 2006, Moscati and Gualmini 2007, Noveck et al. 2007, Gualmini 2008, Gualmini et al. 2008, Zondervan et al. 2008, Conroy et al. 2009, Zhou 2010, and Zhou and Crain 2009). In a series of psycholinguistic experiments (using the truth value judgement task methodology or TVJT) with children aged three to seven, he found that children's interpretations of structures containing quantifiers and negation differ from those of adults in systematic ways. Musolino's test sentences included the quantifiers *some* and *every* (both in subject and object position) and *two* (in object position). Unfortunately, Musolino does not say anything about the quantifier *all*, but he clearly makes the (questionable) assumption that all universal quantifiers behave in the same way.[76] Musolino's main aim is to explain how and why children's interpretations differ from those made by adults, and how children are able to move to the adult interpretations.

Musolino's (1998) major conclusion, which was subsequently questioned by other researchers, was that children, in contrast to adults, exhibit a preference for scope according to linear order. This was termed the observation of ISOMORPHISM. Lidz and Musolino (2002) later refined this observation; by comparing English to the Dravidian SOV language Kannada, they found that "the Isomorphism effect is a consequence of hierarchical structure rather than linear order" (141). Musolino et al. (2000) ascribed the observation of isomorphism to an underlying principle, the so-called subset condition,[77] which states that when children have an alternative, they will "initially opt for the subset value of the parameter" (22) because otherwise they would encounter a learnability problem. They thus proposed a grammatical explanation situated in the framework of

[76] Musolino (1998: 93) says that "we have observed that the interpretation of a universally quantified NP varies according to its syntactic position", even though he only looked at the quantifier *every*.

[77] The isomorphic interpretation corresponds to the subset value according to Musolino's idea that there exists a binary parameter of UG which allows either only an isomorphic interpretation (as is the case in Chinese) or both isomorphic and non-isomorphic interpretations (as in English); "these two values create a subset/superset configuration" (Musolino 2000: 22).

Universal Grammar. However, the subset principle was subsequently shown to be wrong by Zhou (2010) and Zhou and Crain (2009) in a study on Mandarin Chinese, where children first access both interpretations, while adults only access the NEG-V reading. I will not go into the details of Musolino's arguments here since this goes well beyond the scope of the present work, but I will return to later criticism of his ideas below.

But first, before explaining Musolino's theory, I would like to point out some minor problems that are relevant to our topic. Although Musolino (1998) admits that it is unclear to him why a narrow scope reading of *every* is possible in *Every horse didn't jump over the fence*, he claims that "the narrow scope interpretation of *every* seems to correlate with the status of negation i.e. *n't* instead of *not*" (Musolino 1998: 32). Accordingly, Musolino argues that in sentence (34) only the wide scope reading of *every student* is available because the negative item is not contracted.

(34) I would prefer for every student not to come to the party.

This, however, cannot be the correct reason. Nowhere in the literature is a correlation of this kind mentioned and my corpus findings do not support it.[78] Why sentences like (34) cannot be interpreted as NEG-Q can be explained in two different ways. Either the NP *every student* figures as the object of the main clause so that there is a clause boundary between the quantified NP and negation in the *to*-infinitive subclause which prevents the latter from taking scope over the former. A different way of analysing such sentences is provided in Quirk et al. (1985: 1193), who say that in cases like (34), *for* marks the noun phrase it precedes "as the subject of an infinitive clause, rather than as object of the main clause". However, even in this case, there is no finite verb between the subject and negation, so that this is not an instance of an *all…not* construction (or an *every…not* construction).[79] It is thus clearly not the case that the form of the negative item (contracted or not) has anything to do with the fact that only one reading is available; rather, both the fact that only one reading is available in (34) and the fact that contracted negation is not even an option in this sentence are due to its syntactic structure.

[78] Negation is contracted in 17% of all instances in the BNC and occurs in all readings, but least frequently in the NEG-Q reading (negation is contracted in only 18 of all NEG-Q instances (7%), while it makes up for 23% of NEG-V (18) and 28% of COLL readings (38); the percentage is highest for the unclear cases with 43%, probably because contracted negation is more frequent in speech and many spoken cases are unclear). If it was correct that there is a connection between the status of negation and the different readings, the NEG-Q reading – in contrast to Musolino's view – would thus be associated with uncontracted, rather than contracted negation.

[79] Ambiguity only occurs in structures with a finite verb between quantifier and negation (cf. chapter 1).

Another problem is Musolino's attempt at explaining why children acquire the NEG-Q reading of sentences with *every* in subject position so late (around the age of seven, whereas they acquire other adult quantifier-negation interpretations around the age of five). Musolino thinks that this might be due to the markedness of the NEG-Q reading. He gives several reasons for this alleged markedness, all of which are questionable in my opinion. First, Musolino (1998: 236) says that for the NEG-Q reading "negation needs to occur in its cliticized form". I pointed out above that the status of the negative item (contracted or not) has no influence on the presence of ambiguity. In addition, the ambiguity is also present in other languages that do not have contracted negation, such as German. Secondly, Musolino claims the NEG-Q reading is marked because "this option is only attested in certain languages" (236), and may, in fact, "not be available in certain varieties of English such as British English" (236, footnote 4). It is not true that the NEG-Q reading is not available in British English; in fact it is very frequent in the British National Corpus (cf. section 3.4). Moreover, it could be argued that the existence or non-existence of the NEG-Q reading in other languages has no influence on the markedness of this reading in English (although this may be a valid argument in the framework of Universal Grammar, which is adopted by Musolino). Finally, it is not clear a priori that the NEG-Q reading is the marked option since it is, in fact, far more frequent than the NEG-V reading in English (cf. section 3.4). Although this does not necessarily prove that it is the unmarked reading, it certainly makes the claim that it is the marked reading less probable. Thus, if we wanted to postulate the markedness of one of the readings in English, it would rather be NEG-V because it is far less frequent, and is rejected far more often than the NEG-Q reading or even not accepted at all (cf. Carden's, Heringer's and Stokes' results[80] presented in section 2.5). The fact that adults clearly prefer NEG-Q readings (at least in English) is confirmed by a number of other authors (for instance, Musolino and Lidz 2003: 277). As we saw in section 2.3, Horn uses the term 'markedness' in a different way. The concept of markedness is a tricky one and should be used circumspectly with a clear indication in what way a phenomenon is seen as marked or unmarked and in relation to what.

Another interesting issue is raised by Musolino's claim that "all language learners eventually arrive at similar conclusions regarding the interpretation" (37) of quantifier-negative sentences. This is quite a strong statement and diametrically opposed to Carden's postulation of three idiolects. Musolino (1998: 150) supports his claim with the results of his interviews:

[80] It is surprising that Carden, Heringer and Stokes do not figure in Musolino's chapter on QNP-Neg studies or his bibliography, although their work is concerned particularly with the topic in question.

> [A]ll the adult subjects that I interviewed easily recognized the ambiguity in sentences like *Every horse didn't jump over the fence* […] but in the absence of explicit context they indicated a clear preference for the narrow scope reading (not > every) [i.e. the NEG-Q reading].

While this shows again the preference for the NEG-Q reading for sentences out of context,[81] it also casts further doubts on the existence of Carden's idiolects, and supports the stance taken in this work that in principle speakers have access to both readings. Moreover, Musolino argues that the preference for the NEG-Q reading is not due to parsing differences (as Carden would have it), but to the PRINCIPLE OF PARSIMONY, which "predicts that the interpretation which is true in the broader set of circumstances – the superset interpretation – namely the interpretation where negation takes scope over *Every horse*, should be preferred by adults in the absence of decisive context" (Musolino 1998: 174).

While Musolino's claim that adults prefer the NEG-Q reading is thus supported by many authors, his other results, as hinted at above, were criticised for various reasons. The observation of isomorphism was called into question by several researchers, who found that children were able to access non-isomorphic scope (i.e. NEG-Q) under certain circumstances. Musolino and Lidz (2003) admit that children's ability to access the nonisomorphic interpretation dramatically improves when such sentences are preceded by an affirmative statement, as in *Every horse jumped over the log but every horse didn't jump over the fence*. Gualmini (2004) criticised that in previous studies (for instance Musolino 1998 and Musolino et al. 2000) an important felicity condition was not met in the experimental design. According to this felicity condition, negative sentences are only used to point out descrepancies between the facts and the listener's expectations. (This well-known condition was also noted by previous scholars, for instance, Givón (1978: 80), who said that "a felicitous discourse context for the negative is the previous mention of the corresponding affirmative, or alternatively the belief by the speaker that the hearer has heard of the possibility of that corresponding affirmative being true"). Gualmini showed that children's interpretations are adultlike when the felicity conditions are satisfied (for instance, in Gualmini 2004 for sentences with *some*, like *John didn't eat some apples*). Gualmini thus doubts that the differences observed between children and adults in previous studies need a grammatical explanation. Rather, the difference lies in adults' "ability to accommodate experimental stimuli that violate any form of felicity" (Gualmini 2004: 977-978).

Gennari and MacDonald (2005/2006) also doubt both the grammatical and the pragmatic explanations and instead propose an "experience-based processing account"

[81] It is also evidence against Musolino's own argument (discussed in the previous paragraph) that the NEG-Q reading is marked.

(128). They conducted two experiments which showed that adults would not use statements like the ones used in previous experiments and that they found these statements unnatural. By searching the CHILDES corpus, Gennari and MacDonald showed that quantified sentences in general are quite rare in children's and child-directed speech, and that quantifier-negation sentences were nonexistent. They argue that for the expression of the NEG-V reading, adults would opt for the alternative with *none* or an unquantified definite NP. Gennari and MacDonald (2005/2006: 155) therefore

> suggest that the child's interpretation preferences in the quantifier studies need not reflect properties of UG or lack of grammatical and pragmatic competence. Instead, they reflect ambiguity resolution processes in which interpretations are activated as a function of their prior frequency in the input.

Gennari and MacDonald argue that children access isomorphic scope because this corresponds best to their experience with scope of quantifiers and negation in other contexts (for instance, *every* in affirmative contexts). Although some of Gennari and MacDonald's findings are quite interesting, Gualmini (2005/2006) maintains that the very basis of their investigation is vacuous because the observation of isomorphism has been shown to be invalid. The assumption that children prefer surface scope was also shown to be invalid for sentences with modals and negation by Moscati and Gualmini (2007).

This type of criticism was taken up by Musolino and Lidz (2006). The authors admit that their interpretation of earlier results was flawed and that isomorphism is not due to syntactic/grammatical differences between children and adults, but to pragmatic differences. Instead of relating this difference to the felicity conditions of using negation, they argue that is has to do with children's lack of sensitivity vis-à-vis scalar implicatures (839). However, their use of scalar implicature is somewhat questionable, which is also criticised by Gualmini (2008), who provides further evidence against isomorphism. Gualmini (2008) and Gualmini et al. (2008) propose a new explanation for the observed differences in behaviour between children and adults. According to the Question-Answer requirement (QAR), "children select the scope assignment which constitues a good answer to the Question under Discussion" (Gualmini 2008: 1168), no matter whether their interpretation is a true or false statement in the particular context. The observed differences probably result from the fact that adults are able to adjust or accommodate a different question "from the one made salient by the context" (Gualmini et al. 2008: 228) to a greater extent than children. Gualmini et al.'s (2008) investigation is also notable for the

fact that it is the only one in the acquisition literature that controlled for intonation (cf. the disambiguating effect of certain intonation contours discussed in chapter 2.7).

Zondervan et al. (2008) show that the sensitivity to the question under discussion (QUD) also holds for adults, and that it also holds for scalar implicatures. The importance of pragmatic factors is also supported by Noveck et al. (2007), whose study included adults, children and autistic participants. The latter's pragmatic deficiencies are well documented (Noveck et al. 2007: 73). The fact that autistic participants showed the same results as the children, and that both these groups displayed different results from the adults, leads the authors to conclude that these differences are indeed due to pragmatic factors. The problem with this study, however, is that the participants were all French speakers, so that the results may not be comparable to the other investigations, which were all conducted in English or in English compared to another language (Kannada or Italian).

Yet another explanation is put forward by Conroy et al. (2009), who claim that they observed an age factor. According to the results of their experiments, children aged four interpret like adults with inverted scope, in contrast to five-year-olds who prefer surface scope readings. They compare this kind of seemingly retrograde development to the acquisition of past tense verb forms. However, the acquisiton of scope phenomena seems to be quite a different thing from the acquisition of inflectional morphology. Moreover, the authors argue that children initially choose inverse scope interpretations because these are more frequent in the input (Conroy et al. 2009: 116). The problem is that, although the inverse scope NEG-Q reading is indeed the most frequent one in English (cf. chapter 3.4), isomorphic scope is not infrequent either; in fact, when the NEG-V and the COLL readings are added together, the difference between surface and inverse scope readings is not great. The misconception that adults only ever access inverse scope for univeral quantifier-negation structures was put forward by Musolino and Lidz (2006), who claim that "spontaneous examples of sentences of the form *Every/all N neg VP* are *invariably* used on a 'not all' interpreation" (842; original emphasis).[82] Secondly, Gennari and MacDonald (2005/2006) found that quantifier-negation sentences do not feature in child-directed speech at all. Thus the explanation of the observed age factor does not seem very

[82] Interestingly, this claim was based on what Musolino and Lidz (2006: 841) call "a corpus compiled by Musolino". From what can be inferred, this is not a corpus but rather a collection of serendipitous finds similar to my own collection of *all…not* examples. Such a collection can obviously not be called a corpus and one should be very careful not to base overly strong claims on it (especially quantitative ones). After all, the reason why Musolino's collection only contains NEG-Q examples could be due to a bias in his perception of *all…not* sentences, which in turn could be explained by the higher salience of NEG-Q cases. But this is speculation. As will be shown later (section 3.4), a proper corpus analysis reveals that naturally occurring cases are not invariably NEG-Q.

convincing. Moreover, this observation is based on two groups of 15 children each; the average age difference between the groups was only seven months. Maybe it would thus be safer to wait for more results based on a larger group before speculating on the reasons for the alleged age factor. This age factor is also called into question by Zhou and Crain's (2009) results, which are opposed to Conroy et al.'s (2009) in that younger children behave very differently from adults, whereas older children do behave like adults (although this research is based on Mandarin speakers).

Before concluding this review of the language acquisition literature, I would like to mention an interesting point that is raised by several of the authors discussed above. They claim that the adult preference for the NEG-Q reading is due to the fact that the NEG-V reading would normally/always be expressed differently (for instance Musolino and Lidz 2006: 842). As Gennari and MacDonald (2005/2006: 154) put it, the NEG-V "interpretation is essentially preempted by the existence of more acceptable forms." This assumption is in turn seen as the reason for other observations. However, there are of course also alternative expressions for the NEG-Q reading (for instance *not all*). This is also recognised by Gualmini (2008: 1166) when he says that "for either scope assignment, we can find an unambiguous sentence that would express the same proposition denoted by that scope assignment." The failure of the authors mentioned above to even consider the availability of alternative expressions for the NEG-Q meaning is quite perplexing. I will return to the question of alternative expressions in chapter 5, where I consider the reasons for the use of *all…not* constructions.

Finally, I want to mention a last point that sheds some doubt on the purported relatively late acquisition of inverse scope readings by children. Musolino (1998: 96) concluded that "until the age of about 7, the children tested do not know that negation can take scope over a universally quantified expression in subject position." At least as far as German is concerned, I found some anecdotal evidence that suggests that access to inverse scope is not generally barred to younger children. My own children and another boy produced the inverse scope readings shown in (35):

(35) a. Ich hab doch nicht alle Bettlein. *Alle* Bettlein hab ich *nicht*.
[girl, 3:0; NEG-Q]
'I don't have all beds. All beds I don't have.'

b. ... weil *alle* Folgen vom Michel hammer noch *nicht* guckt. [girl, 3:8; NEG-Q]
'… because all parts of Michel we haven't watched yet.'

c. *Alles* is *nicht* weiß. [girl, 3:11; NEG-Q]
'All is not white.'

d. Also, *alle* Pferde hamm's *nicht* gern, wemma se kitzelt. [girl, 4:3; NEG-Q]
'Well, all horses don't like being tickled.'

e. *Alles* Zeug kann ich noch *nicht* so gut lesen. [boy, 5:7; NEG-Q]
'All stuff I can't read so well yet.'

f. *Beide* miteinander hab ich *nicht* gern. Ich hab beide Marmeladen miteinander nicht gern. [boy, 5:7; NEG-Q]
'Both together I don't like. I don't like both jams together.'

g. Ja, *alli* Lüte händ's *nid* gärn. Ich känn au öpper. [boy, 6:6; Swiss G.; NEG-Q]
yes, all people have it not gladly. I know too somebody
'Yes, everybody doesn't like it. I know somebody too.'

h. Nei, *alli* händ *nöd* öppis mitgno. [boy, 6:9; Swiss G.; NEG-Q]
no, all have not something taken
'No, everybody didn't take something.'

Sentence (35)a was produced by a child at the age of only three years. The preceding utterance clearly shows that it is a case of inverse scope assignment. Similarly, the context of production of the other examples in (35) indicated that these are all NEG-Q cases. For instance, the boy who said (35)g, 'All people don't like it' (*it* being marzipan), did like it himself. Musolino's claim that children do not acquire the ability of accessing inverse scope readings until the age of seven thus is not particularly convincing. If a child is able to produce an inverse scope construction, it seems unlikely that s/he would not be able to interpret it correctly, at least in the right contextual and intonational setting.

2.9 Quantifiers and negation in other languages

It is clear that scope ambiguities in general occur in many languages, but it is often debated whether the ambiguity exhibited by English *all…not* constructions exists in other languages. References to similar phenomena can be found in Horn (1989: 501) to Palauan and Japanese and in Horn (1989: 227 with reference to Wagenaar 1930) to Old Spanish. I have already mentioned that the same phenomenon exists in French (for instance Tobler 1902, Jespersen 1966 [1917], Jaspers 2005, Moeschler 2007, Noveck et al. 2007). In addition to English, French and German, Jespersen (1966 [1917]) also cites Danish examples. Sometimes authors are mistaken in their claims that the ambiguity does not exist in a particular language, for example de Haan (1997: 176), who maintained that German only permits NEG-V readings. However, this seems to be the case indeed for another closely related Germanic language, Dutch (cf. note 18 in section 2.3). Kiss and Gyuris (2003) treat scope inversion phenomena in relation to contrastive intonation in Hungarian in a proposal which is a reaction to Krifka (1998). Han et al. (2007) researched the scope interpretations

of Korean adults and children. In Korean, the situation is complicated by two different types of negation, long and short negation. Previous studies apparently produced conflicting results concerning the scope possibilities in Korean. Lee (1999: 324) claims that in Korean, "scope/negation reversal necessarily occurs" when a morphological contrastive topic marker is attached to the universal quantifier. In Japanese, scope assignment is assumed to depend on whether the quantified NP is case-marked or topic-marked (cf. Han et al. 2007, footnote 18; and Okabe 2002, among others). Musolino (2000: 21-22) mentions that in Chinese, only isomorphic scope is available. This is supported by Zhou (2010) and Zhou and Crain (2009). The study on the Dravidian language Kannada by Lidz and Musolino (2002) was already mentioned in section 2.8. Related issues are discussed in Davison (1978) for Hindi/Urdu, which lacks incorporated negative indefinites like *nobody*. As I did not pursue the issue in languages other than English and German systematically, the brief enumeration of literature on quantifier-negation phenomena in other languages presented here naturally makes no claim to be exhaustive, but may give the interested reader some useful suggestions to follow up.

3 An empirical, corpus-based approach

3.1 Aim and scope

In the preceding chapter I surveyed the most important studies concerned with quantifier-negation constructions, and it became clear that a number of issues remain unresolved. I therefore decided to research the topic with corpora of natural language (mostly writing, but also some speech) to gather information on how often *all…not* constructions occur in English and German and how they are used and interpreted. All the issues raised by scope inversion phemomena cannot be tackled in this work. The focus is on constructions of the form *all* (NP) V *n't/not* for English and the basic form *ALL* (NP) V *nicht* for German, both in main and in subclauses.[1] The focus on the universal quantifier *all/alle* enables a comparative approach to this topic, which comprises not just a quantitative analysis of the results, but also renders possible a very detailed qualitative investigation. Such scrutiny is necessary to provide answers to many unsolved riddles. In particular, I am interested in the following issues (most of which, apart from c) and g), have not been treated in detail in the previous literature):

a) How frequent are *all…not* constructions in natural language (British English and German)?
b) Are these constructions ambiguous in context?
c) Which interpretation is more frequent (NEG-Q or NEG-V)?
d) Are there any occurrences of the COLL reading and if so, how frequent are they?
e) What are the distributions in speech and writing?
f) What are the differences between English and German?
g) Can any factors influencing the interpretation be uncovered?
h) Why are *all…not* constructions chosen in the first place, rather than unmarked paraphrases like *not all* for NEG-Q and *no*/*none* for NEG-V?

In trying to answer these questions, the examination of authentic instances ensures on the one hand that we are dealing with real language rather than stilted and constructed examples that would not be likely to occur in a natural context. On the other hand, this approach also shows that naturally occurring examples are usually much more complicated than constructed examples. This serves to demonstrate that simple explanations cannot do justice to the complexities of natural language. This becomes especially pertinent when

[1] In both cases, "V" stands for the finite verb, be it a full verb, modal or auxilliary. It should be noted that this basic structure is changed in certain German subclauses in accordance with German word-order rules (cf. example (i) below). Such cases, in which the VP occurs after the negator *nicht*, were excluded from the dataset because they are never ambiguous. Here negation always has narrow scope (cf. also chapter 1).
(i) Einen Moment denke ich, daß ich das *alles nicht* verstehe, […]. [C4]

addressing questions g) and h). Although certain mechanisms that determine readings have been proposed in the literature, these are either flawed or cannot be applied to all cases. Question h) has not been addressed in previous research at all.

3.2 Material and method

3.2.1 English data

To find instances of the *all…not* construction in real language, I searched the World Edition of the BNC (British National Corpus), which consists of approximately 100 million words of mainly written English (roughly 90%), but also some spoken English (roughly 10%) from a wide range of text types.[2] It is not a trivial task to retrieve constructions of this type from a corpus, but fortunately I was able to use a Perl script, which extracted the sentences I am interested in.[3] It was especially difficult to find restrictions that would reduce the number of irrelevant hits. The aim was to increase precision (i.e. the ratio of relevant instances to unwanted hits) without reducing recall (i.e. without losing relevant instances). Since there is often a trade-off between precision and recall, I made sure to retain full recall, which means that precision was not very high (i.e. I am quite certain that I did not lose any relevant instances, but therefore only a relatively small proportion of all hits was relevant). The script retrieved 2,416 sentences, which were then exported into a database, together with the surrounding linguistic context, for further analysis. All 2,416 sentences had to be checked manually and of these only 490 proved to be relevant cases. Thus I paid for a recall approaching 100% with a precision as low as 20.3%. Preliminary results gained from the BNC material are presented in Tottie and Neukom-Hermann (2010).

3.2.2 German data

It was more difficult to find suitable German material, since there is still a shortage of good, balanced and sufficiently large German corpora that are publicly available, especially as far as spoken language is concerned. I decided to use the so-called Korpus C4, which is a project combining material from four other corpora of different German

[2] More precisely, there are 97,619,934 tagged items, 87,278,205 taken from written texts and 10,341,729 transcribed from speech. Comprehensive information on the BNC can be found on the internet (<http://www.natcorp.ox.ac.uk/>).

[3] I am greatly indebted to Sebastian Hoffmann (then University of Zurich, now University of Trier) for writing this Perl script.

varieties (i.e. standard German written in Germany, Austria, Switzerland and South Tyrol). "The project aims at representing 20th century Standard German in as balanced a manner as possible and to make it accessible online".[4] The regional variation in C4 is paralleled by UK-internal regional variation in the BNC. The C4 subcorpora contain the text types functional texts, nonfiction, fiction and journalistic prose. I restricted my search to texts from 1975-1999 so that the period would be similar to the one represented in the BNC (most texts date from 1975 onwards, with only a minor part of imaginative texts from 1960 to 1975). The C4 sample in question contains roughly eleven million words.[5] The online interface offers the possibility of searching for simple patterns in addition to individual lexical items. The search string used for the present investigation detected all sentences with the lemma *all(e)* followed by the negator *nicht* with up to 15 intervening words. Precision was even lower than in the English material (because I could not integrate restrictions as in the case of the Perl script used for the BNC), so that of the 2,102 hits retrieved only 159 were classified as relevant instances (precision amounts to only 7.6%). Since the output of the online search interface for Korpus C4 only provides very limited context for each hit, all the relevant instances had to be searched again and their respective contexts copy-pasted into the database individually for further analysis.

The aim was to analyse a roughly equal-sized sample for both languages (about 500 instances each), so I had to find additional material for German. The problem is that *all…not* constructions are infrequent (cf. chapter 3.4), so that large corpora have to be used to yield enough relevant data, and the larger German corpora tend to contain only newspaper language. In order to avoid bias towards one particular text type and thus the danger of diminishing comparability with the BNC, I collected the remaining instances from a huge text collection called deWaC, which is the German component of the web-crawled corpora (or probably better text collections) compiled by WaCky (**W**eb-**a**s-**C**orpus **k**ool **y**initiative).[6] Even though the material is not sampled in as strict a way as traditional corpora such as the BNC or the Brown family of corpora,[7] the advantage (not to be underestimated especially when researching infrequent phenomena such as *all…not*

[4] "Das Projekt verfolgt das Ziel, die deutsche Standardsprache des 20. Jahrhunderts möglichst ausgewogen zu erfassen und online zugänglich zu machen." (Korpus C4, Informationen: <http://www.korpus-c4.org/index.php?option=com_content&view=article&id=53&Itemid=64>)

[5] To be precise, the C4 sample with texts from 1975-1999 contains 11,102,803 words, 5,032,720 from the Textkorpus des DWDS (Digitales Wörterbuch der deutschen Sprache des 20. Jahrhunderts), 806,778 words from the Korpus Südtirol and 5,263,305 words from CHTK (Schweizer Text Korpus). It is thus much smaller than the BNC and yields fewer relevant instances.

[6] The data as well as further information on the project and the material can be found at: <http://wacky.sslmit.unibo.it/>. How the corpora were created is described in Baroni et al. (2009).

[7] Compare also Biber (1993) on how to achieve representativeness in corpus design.

constructions) is its size: with more than one billion words,[8] deWaC is even larger than the two huge American corpora COCA (Corpus of Contemporary American English) and COHA (Corpus of Historical American English) put together, and more than ten times the size of the BNC. Retrieval of the relevant sentences, however, was even more difficult in the case of deWaC because the text file containing the data could not be opened with any conventional text editor due to its enormous size.[9] The Perl script used for the extraction of relevant deWaC cases also searched for the lemma *all(e)* followed by *nicht* with at least one and up to 15 intervening words. In a random subset of 6,500 hits, which had been generated in the described manner, I found 367 relevant instances (precision equals 5.6%). Due to the method of retrieval of these instances the context of each sentence again had to be manually searched and copy-pasted into the database for the subsequent analysis.

To sum up, the relevant instances of sentences containing *all…not* constructions in my material amount to roughly 500 for both languages: 490 for English (from BNC) and 526 for German (159 from C4 and 367 from deWaC).

3.3 Analysis

The most important step in the analysis of both the English and the German data was deciding on one of the three possible interpretations: NEG-Q, NEG-V or COLL (cf. chapter 1). Instances that could not be analysed due to ambiguity or opaqueness were assigned to a residual category UNCL (unclear). Types of UNCL examples will be discussed in section 3.3.1. I had to dismiss 21 unclear instances or 4% of the BNC data, 5 instances (3%) of C4 and 7 instances (2%) of deWaC. The figure for the written part of the BNC is comparable to the German data, but the overall frequency of UNCL cases in the BNC is higher because of the large number of anacolutha, unfinished sentences and transcription problems in speech. Of the 43 spoken instances from BNC, ten had to be discarded because they were UNCL. The data on *all…not* constructions in English speech is thus very sparse and comparisons between speech and writing (cf. section 3.4.6) can only indicate rough trends. The situation for German is even more disappointing: I did not find any spoken corpora that were large enough to yield the minimal amount of data for a meaningful study. However, there are 54 spoken German instances in my own collection of examples;

[8] The number of tokens for deWaC is given as 1,278,177,539 in Baroni et al. (2009: 212).

[9] I am very grateful to Gerold Schneider (then English Department and Institute of Computational Linguistics, University of Zurich) for helping me with extraction.

although this collection, consisting of cases I encountered in conversation, lectures and radio broadcasts, does not allow a quantitative comparison to the written material, it shows at least that *all…not* constructions do occur in German speech as well. Moreover, their qualitative analysis yields interesting results (cf. section 3.4.6).

Typical examples of each category NEG-Q, NEG-V and COLL are shown in (1) for English and (2) for German.[10]

(1) a. The value of doubt is that it can be used to detect error. We live in a fallen world. *All* is *not* true, so not everything should be believed; some things ought to be doubted. [C8V:579; NEG-Q]

b. The facts are the facts, and I am compelled to record them with a plainness of detail which in the end offers the only means of extending that small degree of compassion, or perhaps even understanding, which *all* men in whatever circumstance or however degraded should *not* be denied. [ADA:1641; NEG-V]

c. If *all* that money we gave to Band Aid did*n't* do the trick, it must be because there are just too many of them. [HH3:200; COLL]

(2) a. Als Grundstein vieler Burgen wird ein Stein von den Zinnen einer bisher noch nicht bezwungenen Feste verwendet. Auf *alle* Varianten des Aberglaubens am Bau kann hier natürlich *nicht* eingegangen werden. [deWaC; NEG-Q]

b. Ich wunderte mich, daß wir alle durch die Fahrertür einsteigen mußten. *Alle* anderen Türen dieses Vehikels ließen sich *nicht* öffnen. [C4; NEG-V]

c. *Alle* Anordnungen und *alles* ideologische Geklingel können aber über eines *nicht* hinwegtäuschen. [C4; COLL]

There were some problematic cases that were difficult to analyse because of certain words or structures in the sentence. These will briefly be discussed in section 3.3.2. I tried to be as consistent in my analysis as possible, and chose the interpretation that seemed the most probable one in the specific context. To ensure a reliable classification I checked my interpretations very thoroughly in several cycles of analysis. Since the analysis was very time-consuming, it was not possible to have the whole dataset analysed by another person to check consistency. However, some problematic cases were discussed with Gunnel Tottie and both of us agreed on the analysis.

For the English data, an additional category in the analysis was created for more or less stereotyped or formulaic expressions like *all is not well*, *all is not lost* or *all* NP *in the*

[10] In the corpus examples, *all*/*alle* and *not*/*nicht* are highlighted in italics and the respective readings (NEG-Q, NEG-V, COLL or UNCL) are shown in square brackets, in case of the BNC together with the text-ID and sentence number.

world V*n't/not*. These could later be subtracted from the rest of the dataset, since they are more or less frozen entities (that are always analysed in the same way), and therefore not representative of the free and creative production of *all…not* constructions. I will return to the issue of formulaic expressions in section 3.4.4. Furthermore, I marked certain syntactic features in the databases (for example whether the quantifier is followed by an NP), so that later on I would be able to find any potentially interesting correlations between these features and the respective analyses. These features will be discussed in chapter 4, especially sections 4.1 and 4.2.

3.3.1 Types of unclear instances

Before presenting the results, it is necessary to clarify briefly what kinds of cases could not be categorised unequivocally as either NEG-Q, NEG-V or COLL. The majority of the UNCL cases in the BNC (11 out of 21; cf. Table 4) are sentences that are truly ambiguous between two of the possible readings, i.e. cases where the available context does not help to disambiguate the meaning. Two of these ambiguous cases are shown in (3). It is likely that the shared background knowledge of the speakers would resolve the ambiguity of (3)a, but often this knowledge is not available to the analyst, especially in the case of speech.

(3) a. So, I phoned up Joe, and Joe says *all* the results were*n't* in because that's the kind of ordeal next week er er next Friday, tomorrow. [KPD:378; SPOKEN; UNCL (NEG-Q or NEG-V)]

b. It seemed *all* of her father's old acquaintances had *not* been too impressed by his choice of wife. [AD9:1347; UNCL (NEG-Q or NEG-V)]

Table 4. Types of UNCL instances in the BNC; percentages in relation to all instances (N = 490)

	AMB	ANACOLUTHA	OPAQUE	TOTAL
n	11	7	3	21
%	2.2%	1.4%	0.6%	4.3%

Another kind of UNCL instances are incomplete or changed sentences (usually anacolutha in speech and labelled accordingly in Table 4). This category amounted to 33% of all UNCL cases and is illustrated in example (4).

(4) a. Well [pause] I mean a-- [pause] *all* the reasonable kids [pause] do*n't* do [pause] all. [F7E:139; SPOKEN; UNCL]

b. I mean they they're *all* er some, some countries which we call demo democracies erm are*n't* the same as we are, they're. [F8R:552; SPOKEN; UNCL]

Sentences so complicated that they cannot be understood without specialist knowledge (usually written sentences) are opaque. One of only three opaque examples from the BNC is shown in (5):

(5) It is obvious that *all* point mutations affecting the D-stem or the size of the extra arm did *not* cause any discriminatory effects on the identity elements for the tRNA (m 5 C49) methyltransferase. [FTC:908; UNCL]

In the German data, there are only two really ambiguous cases in C4 and four in deWaC, and a few instances that are unclear for other reasons (one in C4 and two in deWaC). To sum up, the UNCL instances can be broken up into ambiguous cases, where the available context does not help the analyst to disambiguate (although speakers may, in fact, be able to disambiguate from shared background knowledge), incomplete or changed sentences (anacolutha) and opaque cases which cannot be understood without specialist knowledge.[11] Henceforth, the UNCL cases will be ignored in the discussion of results.

3.3.2 Problematic cases

The analysis of many corpus examples was straightforward, but among the 490 English instances of *all...not* constructions, as well as the overall 526 German cases, there were also a considerable number that posed special difficulties. These difficulties usually arise from the interplay of several factors; they include:

a) sentences with adverbs
b) sentences with more than one quantifier or a correction or qualification of the quantifier
c) sentences with more than one negative item or special types of negation
d) generally very complex sentences, where a feature in another clause may influence the interpretation of the *all…not* construction

[11] The single UNCL case from the BNC that does not really belong in the AMB category under which it is listed in Table 4 is an example sentence from a linguistics text enumerating types of sentences used in Labov (1975) to investigate failure of negative attraction. Amusingly, this corpus example enabled me to find additional literature on *all…not* constructions.

Problematic cases usually arise when there are several factors simultaneously at work, which makes it difficult to classify them.[12] Since the problematic cases are not the focus of this work, I will not discuss them in detail. However, to illustrate the problems encountered during the analysis I will present some examples.

The sentences shown in (6) all contain an adverb (immediately) following the negator *not*. Adverbs, particularly in this position, often complicate matters, but not in a consistent way. There is always interaction between the semantics of the adverb and the syntax, semantics and pragmatics of the whole sentence.

(6) a. So as the time for hatching approaches, *all* the eggs may *not* be **equally** ready. [F9F:0158; NEG-Q]

b. The CSA 1985 is a complex piece of statutory craftsmanship, and *all* of its provisions do *not* **directly** concern us. [ECD:1139; NEG-Q]

c. I don't think so I believe that the hunting fraternity is not blameless and indeed the, *all* their arguments are *not* **quite** correct in every sense but I firmly believe that there are more important matters for this council to to debate and spend its time and money on. [JNB:544; SPOKEN; NEG-Q]

The situation in sentence (6)a is quite clear. The meaning of the adverb *equally* forces a NEG-Q reading, in a similar way as do constructions with *same* (e.g. *However, recent research has confirmed that* all *calories are* not *the same* [BPG:0561; NEG-Q]). These sentences can easily be paraphrased with *not all* in the usual way (*not all eggs are equally ready* and *not all calories are the same*). While (6)a is an example in which the adverb helps to disambiguate the sentence (cf. section 4.1), there are also cases where the adverb minimises the difference between readings, so that on the pragmatic level they become more or less interchangeable, which makes it difficult to choose a specific reading. This is the case in sentence (6)b. The paraphrases of the NEG-Q and the NEG-V reading are shown in (7)a and (7)b respectively:

(7) a. … not all of its provisions concern us directly. (NEG-Q)

b. … none of its provisions concern us directly. (NEG-V)

[12] This problem was also noted by Zhou (2008: 3-4): "I shifted the focus to scope ambiguity involving sentential negation and a quantifier" as this "seemed to be a conceptually simpler case of scope interaction", but this "turned out to be naïve: various negation-related phenomena got mixed up with scope ambiguity in the data. It was overwhelmingly distracting and confusing".

Let us consider the implicatures that can be drawn from these two readings, assuming the absence of the adverb *directly*. These implicatures can be formulated as shown in (8)a and (8)b:

(8) a. … not all the provisions concern us, but some of them do. (NEG-Q)
b. … none of the provisions concern us in any way. (NEG-V)

Without the adverb, the implicatures differ considerably in the consequences they have for the continuation of the text. While in the case of a NEG-Q reading the speaker/writer is likely to consider those provisions that are of concern, in the case of NEG-V s/he is likely to abandon this topic precisely because it is of no concern. So what happens if the adverb *directly* is included? The implicatures must be reformulated as shown in (9)a and (9)b:

(9) a. … not all provisions concern us directly, but some of them do concern us directly. (NEG-Q)
b. … none of the provisions concern us directly, but all or at least some of them concern us indirectly. (NEG-V)

There are still clear semantic differences between these two implicatures. But the presence of the adverb in the NEG-V reading prevents the proposition from being completely negative. Therefore the two readings are more or less interchangeable on a pragmatic level because the provisions are in some way or another still relevant to the discussion and the writer is likely to pursue the topic further (i.e. s/he will say in what way exactly the provisions are of concern). This is in fact the case, for the following sentence runs like this: *We will, therefore, focus on only a few aspects, namely [...]*. Thus the presence of the adverb *directly* reduces the negativity of the NEG-V reading and, on a pragmatic level, brings it closer to the NEG-Q reading.[13]

In sentence (6)c, the adverb *quite* has a similar function as *directly* in (6)b. The speaker of this sentence employs hedging strategies (apart from the adverb *quite* also the addition of *in every sense*) because he is reluctant to accuse the hunting fraternity of using false arguments. Therefore the NEG-Q reading was chosen in the analysis (*not all their arguments are quite correct*). But because of the hedging effect of the adverb and the

[13] In this case, the adverb in conjunction with negation can be said to function as a kind of DOWNTONER (cf. Quirk et al.'s [1985: 597-599] classification of downtoners).

The role of adverbs is mentioned by Zhou as a point deserving further investigation. Zhou (2008: 60) writes about an example involving *necessarily* that "the negation seems to operate on both of them simultaneouly" (that is the adverb and the quantifier), so that "it seems that *necessarily* promotes the negation on *every* reading" (that is the NEG-Q reading).

addition of *in every sense*, even the NEG-V reading would not be offensive (compare *none of their arguments are correct* vs. *none of their arguments are quite correct in every sense*). In fact, we could argue that in these cases, the potential ambiguity between possible readings does not necessarily have to be resolved because the readings do not differ in a way that is important in the particular context. I will refer to these as cases of UNDERSPECIFICATION (cf. section 4.6). As will be shown in section 4.6, it is usually expedient to analyse such underspecified cases as NEG-Q.

Another case of underspecification can be found in example (10)a for English and in (10)b for German.

(10) a. Though *all* members of a cycle group do *not* need to be competent in **all** five of the recognised face skills, the team as a whole must be able to deploy sufficient resources on each shift to man the roles likely to arise. [CAN:0690; NEG-Q]

b. Als ich dann meinen Arzt gewechselt habe, gab mir die neue Ärztin dieses Buch, und es hat mir wirklich sehr sehr viel geholfen. Aber *alles* was drin steht, trifft *nicht* auf **alle** Babys und Kinder zu. Jedes Baby ist anders, bei einigen klappt's bei anderen widerum [sic] nicht. [deWaC; NEG-Q]

In the case of (10), underspecification is not due to the presence of an adverb, but to the fact that there is another quantifier. It is thus not clear which quantifier is in the focus of negation (cf. section 4.5). Some of the possibilities for (10)a can be paraphrased as shown in (11):

(11) a. Though not all members of a cycle group need to be competent in all five of the recognised face skills…

b. Though no members of a cycle group need to be competent in all five of the recognised face skills…

c. All members of a cycle group need to be competent in some, but not all five of the recognised face skills…

Again, (10)a is probably a case of underspecification because it does not really matter which interpretation is chosen. The point of the utterance is simply that the group as a whole has to be competent in all the skills. Therefore negation in this case is probably best seen as external (negating the whole sentence) and paraphrased most easily with the formula *It is not the case that…* (*It is not the case that all members of a cycle group need to be competent in all five of the recognised face skills*). The situation in the German example (10)b is similar; the sentence contains more than one quantifier and the best

paraphrase is also external (*Es ist nicht so, dass alles, was drin steht, auf alle Babys und Kinder zutrifft*). As will be seen later on, external negation is very typical of underspecification. I will come back to the issue of underspecification and external negation in chapter 4.6, in which I will also explain why the underspecified cases were not classified as UNCL. Furthermore, it should be noted that underspecification is a fuzzy phenomenon and that it is therefore difficult to categorise sentences strictly.

Another feature that can render sentences complex and thus problematic is the presence of more than one instance of negation. In sentence (12), for example, there is one in the higher clause and one in the subclause containing the *all…not* construction.

(12) As a result when I awoke there was **no** positive proof that *all* this had *not* in fact happened, and that it did **not** belong to a mental lapse from which I had recovered. [B0U:1762; NEG-V]

The second subclause (*and that it did not…*) helps in the analysis. Usually, the presence of an anaphoric pronoun, in this case *it*, clearly points to a NEG-V reading, since such pronouns can only refer back to a totality.[14] The presence of negation in the higher clause prevents the overall meaning from being universally negative, so that it must be inferred that *some or even all of this may have happened*.

Example (13) is a particularly difficult one, which – after long and painful pondering – I was able to analyse, but which, I would argue, is far too complicated to be understood without excessive processing cost (and probably impossible to understand without the help of the extended context, which I include in (13)):

(13) We have such a situation of overdetermination of a kind in the fourth example, that of the car with two brake pedals. There is the circumstance which includes the instructor's braking, and the one which includes the pupil's braking. The two circumstances have some conditions in common, evidently, but by the general definition of a causal circumstance we shall come to adopt (1.5), there are two circumstances. Not all of either circumstance was required for the effect, given that the other whole circumstance existed. Each, however, was alternatively required. This is not to say that if the situation had been different then it would still be true that if *all* of either had *not* existed, then if the other had not, the effect would not have occurred. [EVX:0183; NEG-Q]

[14] However, I have also found an example (i) with an anaphoric pronoun, which is clearly NEG-Q:
(i) *All* your suggestions may *not* make it into our pages, but **they** find a place in our hearts. [FT8:507; NEG-Q]
I would argue that in this case the change from *not all* (paraphrase of the NEG-Q reading) in the first part of the sentence to *all* (referred to by *they*) in the second part is indicated by the use of the contrastive coordinator *but* instead of *and*.

Keen readers can try to analyse example (13) themselves. I hope they will agree with my interpretation of the sentence as NEG-Q. Fortunately, however, natural language examples are not usually quite as incomprehensible as this academic text.[15]

3.4 Results

Let us finally turn to the results for both the English and the German datasets. As has been pointed out in section 3.3, each instance was analysed as one of four exclusive alternatives, shown in (14)a-d, by taking into consideration the surrounding context, which often helped to interpret otherwise ambiguous or unclear cases.

(14) a. NEG-Q (weak distributive; negation has wide scope)
b. NEG-V (strong distributive; negation has narrow scope)
c. COLL (collective; negation has narrow scope)
d. UNCL (unclear)

Typical examples of each reading were shown in (1) and (2) in section 3.3 (page 77).

First of all, it should be noted that *all…not* constructions are extremely rare. They occur with a frequency of only five instances per million words (pmw) in the BNC. Although the frequency in the German data with 14pmw for C4 and an estimated 12pmw for deWaC is higher than in the English data, the phenomenon is still very rare.[16] It is not clear why the construction is more frequent in German than in English. One explanation could be that in English the pre-verbal constituent of which the quantifier *all* forms a part can (generally) only function as a subject, while it can also fulfil other roles in German. In example (15), for instance, the quantifier *alles* functions as direct object.

(15) *Alles* was wir dem Kind beibringen, kann es *nicht* mehr selber lernen! [C4; NEG-V]

However, this explanation can only partly account for the different frequencies (cf. Tables 21 and 22 in chapter 4.5 on the syntactic functions of the *all*-constituent in the German

[15] This philosophic text comes from a book by Ted Honderich entitled *Mind and Brain* (which expounds a determinist theory of mind).

[16] It should be noted, however, that there is little information available on the frequency of syntactic constructions, in contrast to lexical frequencies. But even if syntactic constructions tend to be rarer than many lexical items, a frequency of 5-10pmw seems very low. The point in this context, however, is that traditional one million word corpora such as Brown or LOB are far too small to supply enough data for a quantitative study.

data). Moreover, one might assume that the construction should actually be less frequent in German than in English because of certain word-order restrictions. For instance, an *all…not* construction occurring in an English *that*-subclause would have to be realised in German with verb-final word order and would thus not be part of the dataset, which includes only structures with a finite verb intervening between the quantifier and negation (cf. also section 3.1, footnote 1). This is illustrated in example (16)a, with its German translation given in (16)b.

(16) a. But it's important that *all* this good work **is** *not* undone by unhygienic practices after the food is bought – when it is taken home, stored and cooked. [BN7:1807; NEG-V]

b. Aber es ist wichtig, dass *all* diese gute Arbeit *nicht* durch unhygienisches Verhalten zunichte gemacht **wird**, nachdem das Essen gekauft wurde – wenn es nach Hause genommen, aufbewahrt und gekocht wird.

The finite verb is highlighted in bold print, its position in German being towards the end of the subclause, not between the quantifier and negation, and only followed by an adjunct.

A different reason for the higher frequency of *all…not* constructions in German could be the diverging use of the various universal quantifiers in the two languages. It seems, for instance, that in contrast to German, English uses fewer tokens of *all* in favour of forms with *every* (e.g. *everything*). The ratio of *alle* to *jede(r/s)* in German is 5.2, while the ratio of *all* to *every(thing/body/one)* in English is only 3.7.[17] It appears then that for the expression of universality German prefers the quantifier *alle*, while *all* in English is relatively less frequent (although it is still the most frequent universal quantifier, cf. also Biber et al. 1999: 277). The higher proportion of *alle* in German could be due to the fact that this quantifier is gender-neutral (in contrast to *jede(r/s)*). While German seems to focus more on the use of one quantifier (*alle*), with relatively few occurrences of *jede(r/s)*, English employs a wider repertoire of universal quantifiers (*all*, *every* and *each*, compare Figure 1).

[17] The frequency of both quantifiers taken together is more or less the same in both languages: 3540pmw for German (in C4) and 3395pmw for English (written part of the BNC). The more frequent use of *every* in English is even more surprising when taking into account that the quantifier *each* presents yet another possibility for translating German *jede(r/s)* into English. The frequency of *all*, *every(thing/body/one)* and *each* in the BNC taken together amounts to 3941pmw. The ratio of *all* to forms of *every* and *each* taken together amounts to only 2.1. (The occurrences of *each other* were deducted from the results for *each.*)

Figure 1. Distribution of universal quantifiers in English and German

This may indicate that some of the German *all…not* constructions would be realised by another quantifier in English, and the latter are not part of the dataset, resulting in a lower frequency of the construction in English.[18] Quantifier-negation constructions involving *every* also exhibit the potential for ambiguity, albeit only between NEG-Q and NEG-V as *every* cannot be interpreted collectively.

3.4.1 Distribution of readings in the BNC

There are considerable differences between the two languages as far as the respective distributions of the readings NEG-Q, NEG-V and COLL are concerned.[19] I will first discuss the results for English, compare them to previous findings (section 3.4.2) and then to the results for German (section 3.4.3). As can be seen from Table 5 and Figure 2, NEG-Q turned out to be by far the most frequent reading with 255 instances (54%). Although this finding may surprise traditional logicians (e.g. Ladyman 1999 and Lepore 2000), who claim that this reading is nonexistent, I expected the NEG-Q reading to be very frequent in English. This finds support in the many different studies concerning the acceptance and rejection of certain readings of quantifier-negation sentences (cf. chapter 2). Even more striking, however, is the result that the COLL reading is more frequent than the 'logical' NEG-V reading. With 134 or 29% instances COLL makes up more than a quarter of all instances in the BNC, while NEG-V occurs only 80 times (17%). In view of these results, it is surprising that some logicians still cling to the idea that negation in *all…not* constructions can only be interpreted as having narrow scope, and that linguists of all persuasions, although some of

[18] It would be interesting to test this hypothesis with a parallel English-German corpus (e.g. Europarl Parallel Corpus), but this goes beyond the scope of the present work.

[19] In what follows, the figures for the category UNCL have been eliminated from consideration because of the higher UNCL proportion in the BNC, which is due to the spoken part of the dataset (cf. chapter 3.3 and 3.3.1), and because the few cases that cannot be assigned to a particular reading for various reasons are not particularly interesting to analyse in more detail.

them have recognised the importance of the wide scope NEG-Q reading, have almost without exception ignored the relatively frequent COLL reading.

Table 5. The distribution of readings of *all…not* constructions in the BNC

	NEG-Q	NEG-V	COLL	TOTAL
n	255	80	134	469
%	54%	17%	29%	100%

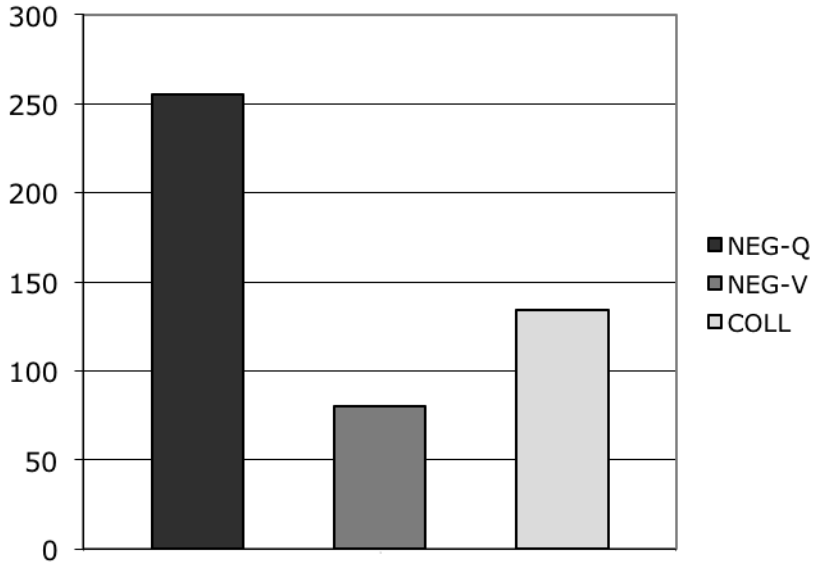

Figure 2. The distribution of readings of *all…not* constructions in the BNC

3.4.2 Distributions: BNC versus Taglicht

Since, as was mentioned in section 2.6, Taglicht's unpublished study has inspired the present study, it is interesting to compare the BNC results with Taglicht's results, obtained from the Brown Corpus (American English), the Lancaster-Oslo-Bergen Corpus (British) and the London-Lund Survey of Spoken English (British), totalling roughly 2,500,000 words. A comparison between my findings and Taglicht's shows that Taglicht found relatively more instances of the *all…not* construction in his material – namely 8.4 instances per million words (pmw), compared to 5 instances pmw in the BNC. The construction is slightly less frequent in speech (cf. section 3.4.6), but as the proportion of speech in Taglicht's material is higher than in the BNC, this cannot account for the differences between the BNC and Taglicht's corpora. In the BNC the construction in question is thus even less frequent than Taglicht (ND: 6) thought.

Table 6. Instances in Taglicht (revised[20]) and the BNC (without UNCL); percentages

	NEG-Q	NEG-V	COLL	N
TAGLICHT	52%	13%	35%	23
BNC	54%	17%	29%	469

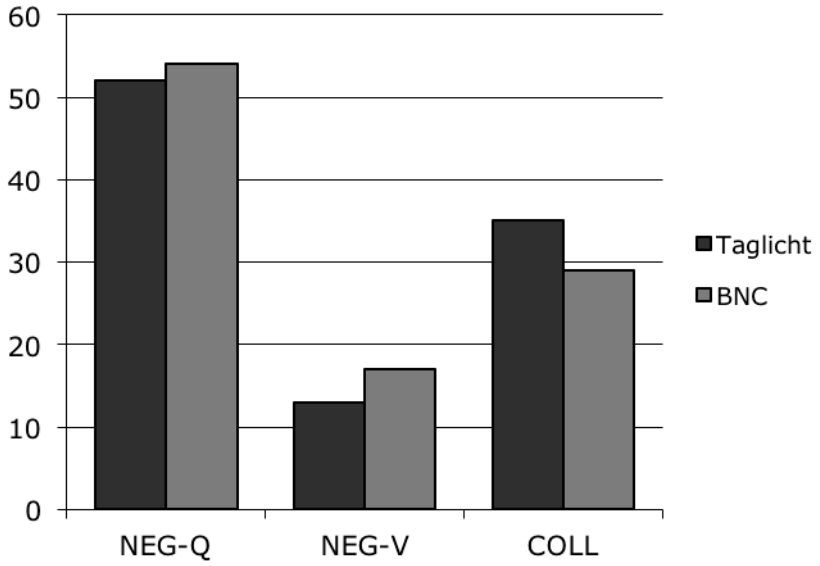

Figure 3. Instances in Taglicht (revised) and the BNC (without UNCL); percentages

The distributions of the three readings in the two datasets are very similar. My findings support Taglicht's (ND: 6) "impression that the strong distributive reading ([…] NEG-V) is considerably less common than the weak distributive reading ([…] NEG-Q)" (cf. Table 6 and Figure 3). This corresponds also to the rates of rejection in Carden (1973b), Heringer (1970) and Stokes (1974), and to Carden's study (1973a: 51), in which 40% of 40 informants interpreted the sentence *All the boys didn't leave* as NEG-Q, but only 10% as NEG-V (cf. section 2.5). I found slightly more NEG-V cases in the BNC than Taglicht did in his corpora, while the BNC contains somewhat fewer COLL instances than Taglicht's dataset. The overall distributions, however, are remarkably similar[21] and the remaining differences

[20] Taglicht's original figures were: 13/21 NEG-Q, 0/21 NEG-V and 8/21 COLL. The revised figures in Table 6 include two NEG-V cases that were excluded by Taglicht (ND: 10, note 11), who "ignored those sentences in which coordination in the subject or in the predicate forces a strong distributive reading". Similar coordinated examples from my datasets will be presented in chapter 4.2. Moreover, I changed one of Taglicht's NEG-Q cases to NEG-V because it had been analysed incorrectly. (This change is also endorsed by Gunnel Tottie, pc). Taglicht's revised figures are thus 12/23 NEG-Q, 3/23 NEG-V and 8/23 COLL.

[21] A chi-square test also reveals that the differences between my results and Taglicht's are not significant ((χ^2=0.52, df=2, p=0.77). (The rule of thumb is usually that such a test is only meaningful in case all figures are above five. However, according to Lowry (1998-2013) on <vassarstats.net>, the test is still permissible if "at least 80% of the cells […] have an expected frequency of 5 or greater, and no cell […]

are probably due to the fact that Taglicht's corpora are much smaller than mine (2,500,000 words compared to roughly 100,000,000 words in the BNC) and comprise a different proportion of text types.

3.4.3 Distributions: English versus German

While the distributions of the three readings in the BNC turned out to be very similar to those found in Taglicht's (ND) dataset, thus confirming the results for English, the situation is very different in German. Table 7 and Figure 4 show the distribution of readings in C4 and deWaC compared to that in the BNC.

Table 7. Distributions of readings in BNC, C4 and deWaC

	NEG-Q		NEG-V		COLL		Total	
	n	%	n	%	n	%	n	%
BNC	255	54%	80	17%	134	29%	469	100%
C4	17	11%	91	58%	48	31%	156	100%
deWaC	34	9%	205	56%	124	34%	363	100%

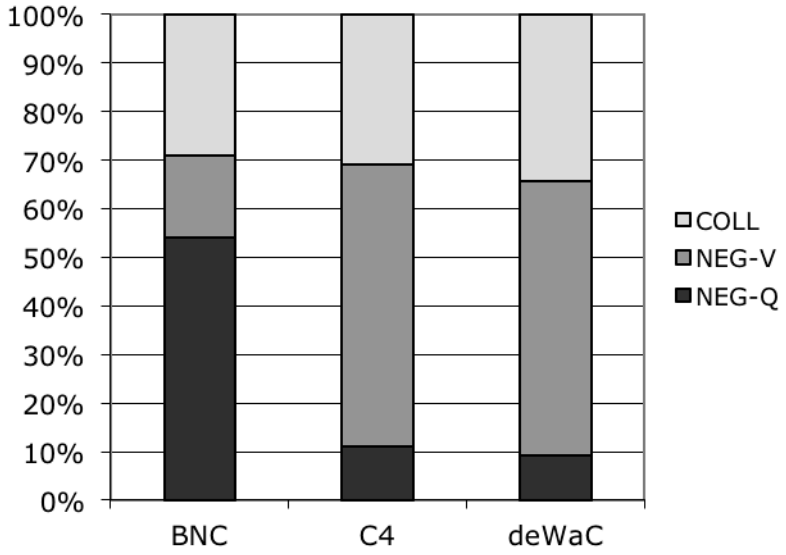

Figure 4. Distributions of readings in BNC, C4 and deWaC (percentages)

ha[s] an expected frequency smaller than 1.0", which is true in this case.) Of course the fact that the chi-square test is not significant is no proof that the two datasets are really similar, but at least the null hypothesis that they are similar is not falsified.

The frequency of the COLL reading is roughly the same, with around 30% in all three corpora (134 instances in the BNC, 48 in C4 and 124 in deWaC). But the frequencies of both NEG-Q and NEG-V are very different in German and in English. In German it is the NEG-V rather than the NEG-Q reading which is the most frequent one, with 58% in C4 and 56% in deWaC. Logicians and prescriptivists might argue that (in this respect at least) German is a more logical language than English. The NEG-Q reading, which is so frequent in English, amounts to only 11% in C4 and 9% in deWaC. But at least de Haan's (1997: 176) claim that the NEG-Q reading of *all…not* constructions does not exist in German is refuted. The frequencies for the two German datasets are very similar and a chi-square test comparing the results for C4 and deWaC reveals that there is no significant difference between the two (χ^2=0.7, df=2, p=0.7047, Cramer's V=0.037).[22] However, the differences between the BNC and each of the German corpora are highly significant.[23] The strongest factor responsible for this difference seems to be the occurrence of the formulaic expressions in English already mentioned in section 3.3. There are no formulaic *all…not* expressions in the German datasets.[24] Although the formulaic expressions represent such a strong factor in English, they have never been acknowledged in previous research, probably because scholars have always relied on constructed examples and intuition, rather than exploring authentic data. In the next section 3.4.4, I will take a closer look at these formulaic or idiomatic expressions, which seem to be so typical of English (NEG-Q) *all…not* constructions.

3.4.4 Formulaic expressions in English

During the analysis, many English *all…not* constructions turned out to be stereotyped or formulaic, such as *all is not lost* or *all ist not well*. According to Wray (2002: 8), there is a "plethora of terms" for such more or less fixed or idiomatic expressions and by choosing the term FORMULAIC EXPRESSION I do not want to commit myself to any particular theoretical position regarding these sequences of words. It has to be stressed, however, that

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22 But cf. the caveat in footnote 21.

23 BNC versus C4: χ^2=124, df=2, p<0.0001, Cramer's V=0.445; BNC versus deWaC: χ^2=214, df=2, p<0.0001, Cramer's V=0.507.

24 One candidate has a fairly idiomatic feel and occurred five times in C4: *alles* modal verb *nicht darüber/ über* NP *hinwegtäuschen*, as for example in (i).

(i) *Alle* Anordnungen und *alles* ideologische Geklingel können aber über eines *nicht* hinwegtäuschen.

However, this expression did not occur in deWaC and was therefore not counted as formulaic. Apart from this, I found a single German case that is parallel to the English *in-the-world* idioms (cf. ii):

(ii) Der beste Schreibtisch, der beste Tisch im Restaurant und *alle* Kratzfüße der Welt, die man macht, werden diese Bedürfnisquelle *nicht* zum Versiegen bringen. [deWaC; COLL]

fixedness or fossilisation and non-compositionality cannot be regarded as defining features of my formulaic expressions. On the one hand, formulaic *all…not* constructions show variation in their form and can be expanded by additional material,[25] and on the other hand their meaning can, at least theoretically, still be derived compositionally. Wray's "working definition of the formulaic sequence", which "aims to be as inclusive as possible" (2002: 9), demonstrates the most important aspects of my formulaic *all…not* constructions:

> a sequence, continuous or discontinuous, of words or other elements, which is, or appears to be, prefabricated: that is, stored and retrieved whole from memory at the time of use, rather than being subject to generation or analysis by the language grammar. (Wray 2002: 9)

An important defining aspect of formulaic expressions is the fact that they are prefabricated. Since formulaic expressions are therefore not "subject to […] analysis", we would expect them to always receive the same reading, which – as we will see – is in fact the case. Another "salient, perhaps even determining, factor in the identification of formulaic sequences" (Wray 2002: 25) is their frequency. The advantage is that frequency is an aspect that can easily be determined in a corpus linguistic study such as the present one, while the question whether these sequences are "stored and retrieved whole from memory" is not verifiable with the methodology used in this study. Relevant evidence on this latter point must instead be left to psycholinguistic experiments.

However, we must not be led to conclude that it is the absolute frequency of occurrence which determines whether a sequence can be regarded as formulaic. We have already seen that *all…not* constructions are extremely rare so that they could not be regarded as formulaic if we were to "establish a certain frequency threshold" (Wray 2002: 25).

> [R]aw frequency is not an adequate measure for formulaicity. To capture the extent to which a word string is the preferred way of expressing a given idea […], we need to know not only how often that form can be found in the sample, but also how often it *could* have occurred. Wray (2002: 30)

In other words, according to the principle of accountability, we need to verify whether and how often the messages expressed by those *all…not* constructions that I regard as formulaic are also expressed differently in the corpus. This issue will be addressed below.

My list of formulaic *all…not* constructions includes the following: *all is not lost/ well/perfect/good/gloom (and doom)*. All of these expressions receive the NEG-Q reading. Examples of these formulaic expressions are presented in (17):

[25] This is not a problem for their categorisation as formulaic expressions. Wray (2002: 34) admits "that only a small subset of formulaic sequences are entirely fixed".

(17) a. A third aide travelling with the royal household insisted *all* was *not* **lost** between Charles and Diana. [CEN:2108; NEG-Q]

b. Sock Shop admitted earlier this year that *all* was *not* **well** with its American outlets. [AAS:376; NEG-Q]

There are also formulaic *all…not* constructions that are always interpreted as COLL. These are mostly of the form *all* NP *in the world* V *not*,[26] but nine of the COLL formulaic expressions are of the form *(as if) all this wasn't enough*.[27] Typical examples of these COLL *all…not* constructions are presented in (18):

(18) a. If you fail to make them right, then *all* the marketing and computers **in the world** wo*n't* help you. [A6L:1316; COLL]

b. That had not been spotted and the coroner had pointed out how *all* the instruments **in the world** could *not* have detected it. [AD1:2783; COLL]

c. As if *all* **this** were *not* **enough**, schools have started managing their own financial affairs. [ABE:1816; COLL]

The fact that these expressions (the *all is not lost*-type and the *in the world*-type, respectively) are always interpreted in the same way already points to their formulaic nature. But how can we investigate in which way (and how often) the content expressed by these constructions is expressed differently in the corpus? What we need to find out is the "ratio of message to message-expression" (Wray 2002: 31).

In the case of *all is not lost*, this is not so difficult. This expression can most easily be paraphrased as *not all is lost*, which is, moreover, the unmarked way of expressing the NEG-Q reading (as is generally agreed on in the literature). It turns out that the BNC does not contain a single instance of *not all is/was lost*, while there are 32 instances of *all is/was not lost* (there are even 49 if we count modified cases like *all may not be lost* or *all is not yet lost* as well). Similarly, there are no instances of *not all is/was well*, but 44 instances of *all is/was not well* (or 52 with the modified cases).[28] It is clear then, that the messages expressed by *all is not lost* or *all is not well* are idiomatically formulated as *all…not*

[26] Expressions with *in Christendom* or *of all times* instead of *in the world* were also included in this category.

[27] There are also thirteen cases of *all this is not to say/suggest* or *all this does not mean* (with factual verbs). Although these could be argued to be formulaic COLL instances as well, they were not included in this category because it is much less homogeneous than the others and because the combination *all this* is frequently followed by other predicates as well.

[28] Overall, there are eleven cases of *not all is/was X* in the BNC, with the following complements: *spleen/gloom/gloom and doom/hopeless/dead/seen/forgotten or forgiven/stress/running Glaxo's way/of the type/beyond reproach*. Compared to the number of formulaic *all…not* constructions, however, this figure is very low.

constructions, rather than as *not all* constructions. This finds further support in the fact that there are no instances of *everything is not lost/well*, and only one instance of *everything was not well*. This shows that these idioms almost always occur with the universal quantifier *all*, not *everything*.

So how frequent are formulaic expressions of the *all is not lost*-type and the *in the world*-type in the BNC? Results are shown in Table 8.

Table 8. The distribution of formulaic instances in the BNC

	FORMULAIC		TOTAL
	n	%	
NEG-Q	143	56%	255
NEG-V	0	0%	80
COLL	35	26%	134
UNCL	0	0%	21
TOTAL	178	36%	490

Table 8 shows that there are no formulaic expressions that were analysed as UNCL or NEG-V, which means that all formulaic expressions could be analysed fully and that all NEG-V instances are non-formulaic. In contrast, there are as many as 143 formulaic NEG-Q instances, which amounts to more than 50% of all NEG-Q instances. The percentage of formulaic expressions in the COLL category is not as high. But with more than 25% of all COLL cases, the formulaic COLL instances still make up a considerable portion of all COLL instances. Overall, 178/490 or 36% of all the *all…not* constructions found in the BNC are formulaic. This is a remarkable result and one that has never been addressed in the literature, probably because previous researchers have only investigated the acceptability of different readings instead of the actual use of the constructions.

The high frequency of formulaic *all…not* constructions bears on the use and function of *all…not* constructions in everyday communication and necessitates a reassessment of the distributions of their possible readings. Since the formulaic expressions are prefabricated they may distort the full picture of the freely produced, non-formulaic *all…not* constructions. Therefore the results for the different readings were calculated again without the formulaic expressions. They are shown in Table 9 and Figure 5.

Table 9. The distribution of non-formulaic instances in the BNC (without UNCL)

	NEG-Q	NEG-V	COLL	TOTAL
n	112	80	99	291
%	38%	27%	34%	100%

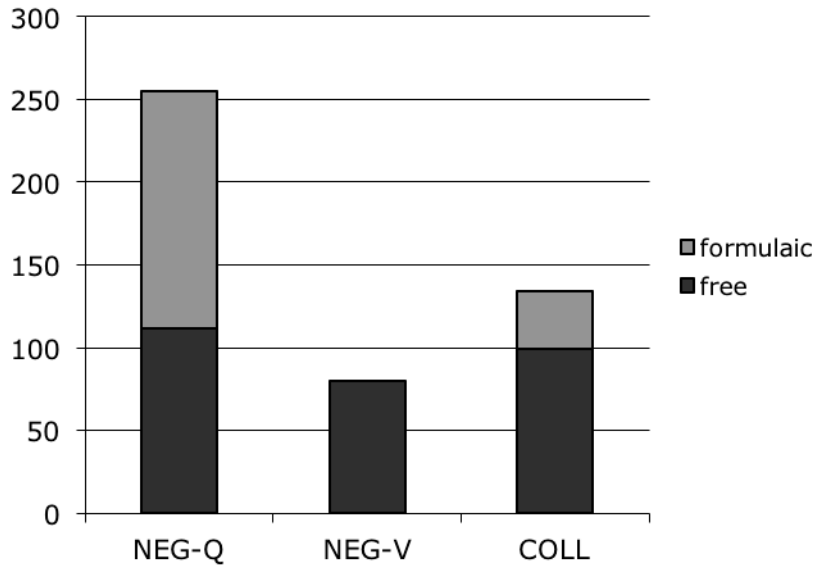

Figure 5. Formulaic and non-formulaic instances in the BNC

Figure 5 shows graphically the very high proportion of formulaic expressions in the NEG-Q category and also the distributions of the non-formulaic instances across the different categories. When the formulaic expressions are discounted, the NEG-Q reading is still the most frequent one (with 38%), followed by COLL (with 34%), while NEG-V is still the least frequent reading (with 27%). But the differences between the frequencies are not as pronounced and all three readings now make up very roughly one third of all instances, which is the proportion expected by chance.[29]

To sum up, the 'illogical' NEG-Q reading is still the most frequent reading, even if the numerous formulaic expressions are subtracted from this category. Secondly, the neglected COLL reading is still at least as frequent as the NEG-V reading. And finally, the question

[29] A goodness of fit test reveals that the observed proportions of the readings of non-formulaic expressions are not significantly different from the expected proportions ($\chi 2=5.34$, df=2, p=0.0693; a goodness of fit test including the formulaic expressions, on the other hand, is highly significant: $\chi 2=102.73$, df=2, p<0.0001). But note the caveat mentioned in footnote 21.
For the sake of completeness it should be noted that Taglicht's material contains formulaic expressions as well. One of his eight COLL instances is of the *in the world*-type, and two of the thirteen instances Taglicht analyses as NEG-Q are *all is not well*.

arises whether the high incidence of formulaic expressions with a NEG-Q sense is responsible for the wide-spread impression that the NEG-Q reading is more acceptable and more easily accessed than the NEG-V reading in the presentation of isolated sentences (cf. chapter 2).

Another question arising from the high frequency of formulaic expressions in the NEG-Q sense is whether this is just a reflection of the fact that *all…not* constructions are generally more often interpreted as NEG-Q, or whether the high frequency of the NEG-Q reading is due to the widespread use of these formulaic expressions, which are mostly interpreted as NEG-Q. Of course, this question cannot be answered with the available methodology,[30] but one could imagine that since *all…not* constructions are rather marked they tend to be interpreted like well-known idiomatic expressions. Alternatively, it may be the case that many *all…not* constructions are formed in analogy to formulaic expressions (e.g. *all was not trouble-free* [B09:12; NEG-Q] in analogy to *all was not well*). In either case, however, one would still have to explain why these formulaic expressions are interpreted as NEG-Q in the first place, or – to turn the question around – why these NEG-Q meanings are formulated as *all…not* constructions instead of as *not all* constructions. It is difficult to imagine a way in which one could measure the influence of idiomatic expressions of this type on the interpretation of other *all…not* constructions, so this issue has to remain largely unresolved. However, the fact that the ratio of NEG-Q cases is much higher in English than in German, even when only the non-formulaic cases are considered, may well indicate an influence of the idiomatic expressions on 'freely' used *all…not* constructions.

3.4.5 Distributions: English versus German non-formulaic cases

As was shown in section 3.4.4, the vast majority of English NEG-Q instances are formulaic, as well as a substantial part of the COLL cases. When these NEG-Q and COLL formulaic expressions are eliminated from the data, the differences between English and German are not as marked as before (cf. Table 10 and Figure 6), but still highly significant.[31] Although a number of formulaic expressions are COLL, the percentage of COLL instances remains

[30] Perhaps a psycholinguistic experiment could shed light on this issue. An indication that the NEG-Q idiomatic expressions form part of a more general construction *all is/was not X* is provided by figures from COCA, the 450 million-word corpus of contemporary American English. There are 230 instances of *all is not*, but only 44 instances of *not all is*, and 113 instances of *all was not*, but only 12 instances of *not all was*.

[31] For the BNC data versus C4 data, χ^2=52, df=2, p<0.0001, Cramer's V=0.342 and for BNC versus deWaC, χ^2=92, df=2, p<0.0001, Cramer's V=0.377.

about the same, so that the COLL readings make up around one third of all non-formulaic *all…not* constructions in both English and German. The ratio of the English NEG-Q cases is now much lower with 38% (from 54% including formulaic expressions), but still much higher than in German, with only around 10%.[32]

Table 10. Distributions of readings in BNC, C4 and deWaC, without formulaic expressions

	NEG-Q		NEG-V		COLL		Total	
	n	%	n	%	n	%	n	%
BNC	112	38%	80	27%	99	34%	291	100%
C4	17	11%	91	58%	48	31%	156	100%
deWaC	34	9%	205	56%	124	34%	363	100%

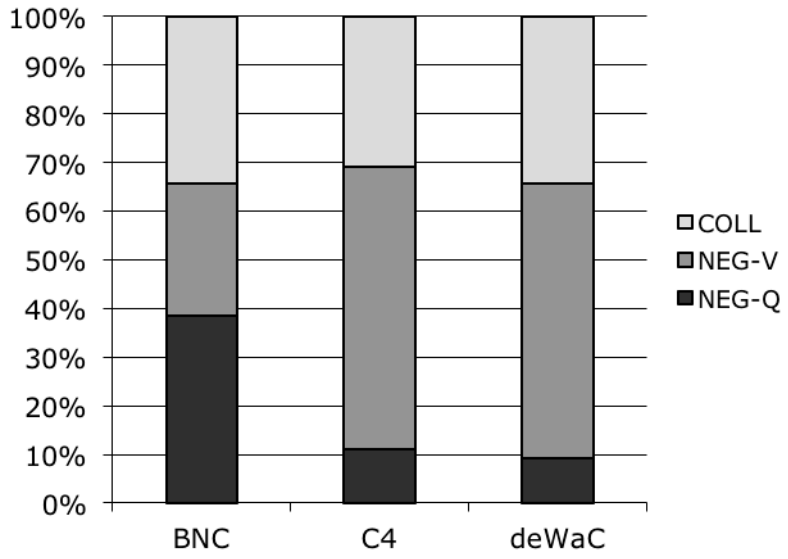

Figure 6. Distributions in BNC, C4 and deWaC (percentages), without formulaic expressions

3.4.6 The construction in speech and writing

The preceding two sections demonstrated that formulaicity is a very important factor as far as English NEG-Q and COLL *all…not* constructions are concerned. It may seem probable that these idiomatic expressions, and maybe also *all…not* constructions in general, occur more often in speech than in writing, since production constraints are usually much higher in the former mode of communication and the retrieval of prefabricated chunks is probably easier than the generation of free utterances. And yet, both the fact that Taglicht did not

[32] Note, however, that I collected quite a large number of spoken German NEG-Q cases, which might indicate that the NEG-Q reading occurs more often in German speech than in writing (cf. section 3.4.6).

find any spoken *all…not* constructions in his material and the markedness of the construction as such could mean that, whether free or formulaic, they only occur in more carefully prepared written language. These two (opposing) hypotheses will be looked at in this section in the context of a more general comparison between speech and writing. Due to the lack of corpus data for spoken German, what follows applies only to English *all…not* constructions.

Surprisingly, both the above hypotheses turn out to be wrong. Although Taglicht (ND: 8) found "not a single instance in the [London-Lund] Survey of Spoken English of any of [the] three kinds of *all…not* sentences", I found 43 spoken instances in the BNC. This amounts to a frequency of 4 instances pmw, which is almost as high as in writing (with 5 instances pmw; cf. Table 11).

Table 11. The distribution of the *all…not* construction in speech and writing in the BNC

	SPEECH	WRITING	TOTAL
n	43	447	490
pmw	4	5	5

It was probably due to the limited size of the London-Lund Corpus, which consists of no more than 500,000 words, that Taglicht did not find any spoken instances. Taglicht (ND: 8) says that he did not expect to find "distributive *all*, in view of the generally non-colloquial character of the instances in Brown and LOB." Rather, he expected to find a few COLL instances in speech, but he suspects that "the selection of texts is skewed against this particular construction" because COLL *all* "seems to occur most often in strongly emphatic utterances […], and these may be relatively uncommon in the predominantly low-key dialogue that predominates in the recordings" (Taglicht ND: 8).

Is Taglicht's hunch accurate, then, that spoken *all…not* constructions are mostly COLL? Or are there many formulaic NEG-Q cases in speech? Table 12 and Figure 7 demonstrate the differences between the readings in speech and writing. The NEG-Q reading is also the most frequent one in speech (with 45% of all cases), albeit lower than in writing (55%). The NEG-V reading, on the other hand, is more frequent in speech (30%) than in writing (16%). Surprisingly, the NEG-V reading is even more frequent in speech than the COLL reading, which amounts to only 24%. It therefore seems that Taglicht was wrong in assuming that the COLL reading would be particularly frequent in speech.[33]

[33] There is no significant difference between the results of speech and writing (χ^2=4.4, df=2, p=0.11), but cf. footnote 34.

Table 12. Frequencies of the different readings in speech and writing in the BNC (without UNCL instances)

	SPEECH		WRITING	
	n	**%**	**n**	**%**
NEG-Q	15	45%	240	55%
NEG-V	10	30%	70	16%
COLL	8	24%	126	29%
TOTAL	33	100%	436	100%

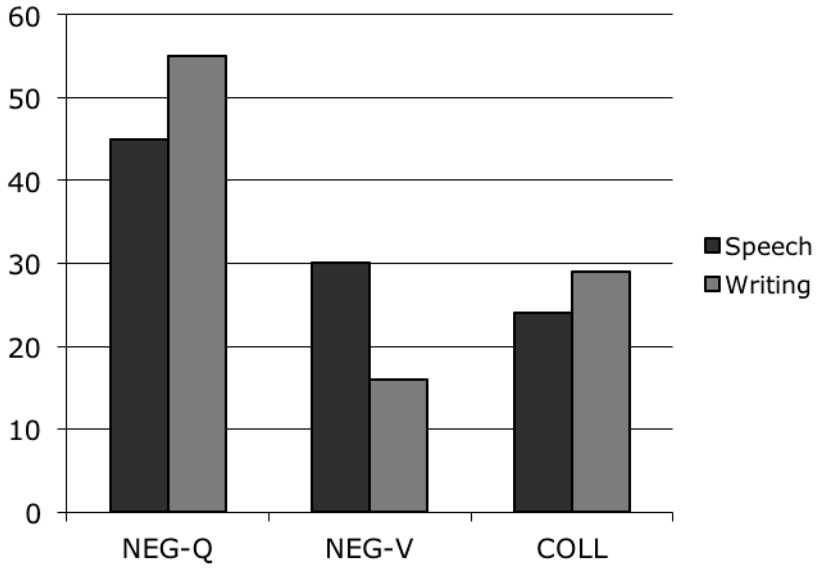

Figure 7. The different readings in speech and writing (percentages; without UNCL instances)

The relatively low frequency of NEG-Q cases in speech compared to writing is accentuated by the fact that there are five spoken NEG-Q instances of more or less exactly the same sentence in a sermon (*all will not be saved/safe*; Text-ID: KN7), one of which is presented in sentence (19).

(19) … and let the one who wishes take the water of life without cost, the invitation is to all, so it's quite clear that all maybe saved, but it's equally clear, a second proposition that *all* will *not* be saved. [KN7:7; NEG-Q]

This means that the NEG-Q reading is probably overrepresented in speech. If four of these five sentences are removed from the data, the differences between the three readings are levelled further (38% NEG-Q, 34% NEG-V, 28% COLL).[34]

[34] When these four NEG-Q cases are removed from the dataset, the difference between speech and writing becomes significant (χ^2=6.86, df=2, p=0.03); cf. footnote 33. Note caveat in the following paragraph.

However, the distribution of the different readings in speech must be interpreted with caution. Although the frequency of *all…not* constructions seems to be comparable in speech and writing, there were only 43 spoken instances to analyse since the spoken part of the BNC is much smaller than the written part. This number may already be too small to make reliable observations concerning the incidence of the different readings in speech. This problem is exacerbated by the fact that a substantial part of the spoken instances are UNCL (10 instances, or 23%; these UNCL spoken instances were excluded from Table 12 and Figure 7). As was mentioned before, the high frequency of UNCL instances in speech is due to the fact that a lot of the spoken sentences are incomplete or anacoluthal. Moreover, the context of the speech situation is often far less explicit than in writing, where authors have to clarify any potential difficulties from the beginning. In speech, by contrast, especially if the participants are well acquainted, there is a common ground and hearers always have the possibility of asking for clarification when the need arises. Analysing the sentences in question with only a relatively short stretch of surrounding context is more difficult when this context is less explicit, as it tends to be in speech, and thus a greater proportion of spoken examples (compared to written) are UNCL. This explanation is also supported by the fact that eight of the ten UNCL instances occur in dialogue and only two in monologue, which, in this respect, is more similar to writing than to speech (as there is no backchannelling).

Returning to the two hypotheses proposed at the beginning of this section, what about the assumption that there may be quite a large number of formulaic cases in speech? This hypothesis, too, turns out to be wrong. There are only two formulaic cases in all the spoken instances, one NEG-Q and one COLL (cf. Table 13).

Table 13. Numbers of (non-)formulaic instances in speech and writing

	SPEECH		WRITING	
	non-formulaic	**formulaic**	**non-formulaic**	**formulaic**
NEG-Q	14	1	98	142
NEG-V	10	0	70	0
COLL	7	1	92	34
TOTAL	31	2	260	176

Thus it appears that the formulaic NEG-Q and COLL *all…not* constructions are idioms that are used predominantly in writing, but not in speech. This finding would probably surprise Taglicht, who expected strongly emphatic COLL cases with *in the world* to occur in speech. Taglicht was led to this assumption by several very similar COLL instances in two of John

Webster's plays. These instances reflect very emphatic spoken utterances. It seems that the construction in question is either not used like this in speech any more, or that its use in Webster's plays is not a particularly good imitation of real speech (which, given the fact that his plays are predominantly written in iambic pentameter, is hardly surprising). If the latter is true, then it is probably safe to assume that COLL instances of this kind are more typical of literary language than of real spoken language, at least nowadays.

In any case, further evidence for the fact that *all…not* constructions do occur in speech as well is provided by my own collection of quantifier-negation sentences. This collection comprises spoken and written examples from both English and German. Most of the spoken examples are German and were collected in everyday conversation, lectures, while listening to the radio etc. The English instances are mainly written,[35] but two of the spoken English examples are provided in (20)a and b.

(20) a. I'm not sure that *all* of us have *not* got … [C. M., 2001; UNCL]
b. *All* r's are *not* alike. [C. F., 19-6-2002; NEG-Q]

The rather complex formulation in (20)a with a negated main clause was produced by a native speaker of British English in a course on developmental language pathologies (unfortunately this sentence could not be recorded completely, but it can still serve to show the use of the construction in question). Sentence (20)b was also produced in a lecture (on the language variety spoken in Alabama, by a native speaker of that same variety). While sentence (20)b is a fairly typical construction with *alike*, and the construction was probably chosen on purpose to emphasise the proposition, sentence (20)a may be due to lack of planning; the speaker might have put her intended meaning more clearly if she had had more time to plan the sentence in advance. This indicates that there are probably various reasons for the choice of *all…not* constructions (rather than the unmarked versions that could be used to express NEG-Q and NEG-V senses; cf. chapter 5). Sometimes, especially in speech, they may 'happen' because of production constraints, or they can fulfil different communicative functions.

A selection of spoken *all…not* constructions from (Swiss) German is presented in examples (21)a-e.

[35] The fact that for German I collected more spoken than written examples and vice versa for English, seems to reflect my linguistic situation: my conversational partners usually speak German varieties, while in the case of English written language predominates.

(21) a. *Alli* Lüt chönd *nid* so schlimm si wie-n er immer sait.
[T. N., 26-02-2006; Swiss; NEG-Q]
all people can not as bad be as he always says
'All people cannot be as bad as he always says.'

b. *Alles*, was katholisch war, wollten wir ja *nicht* haben.
[S. K., 22-07-2005; NEG-V]
all that Catholic was wanted we MOD-PART not have
'We didn't want anything that was Catholic.'

c. … und *alles* kann er *nicht* auf die politischen Gegner abschieben.
[DRS1, 05-04-2001; NEG-Q][36]
and all can he not on the political opponent shift on
'… and he cannot shift everything on the political opponent.'

d. … weil *alle* Folgen vom Michel hammer noch *nicht* guckt.
[M.N., 29-10-2012; Swabian; NEG-Q]
because all parts of NAME have-we yet not watched
'… because we haven't watched all parts of Michel yet.'

e. *Alles* guete Zuerede hät also *nüt* gnützt. [S.P., 08-03-2010; Swiss; COLL]
all cajoling has so nothing helped
'So all cajoling was of no use.'

As can be seen in examples (21)a and d, respectively, my collection of spoken German examples also contains Swiss German and Swabian. It also includes the whole range of constructions with *all* as either pronoun, as in (21)c, or predeterminer, as in (21)a and d; in (21)b, *all* is followed by a relative clause. Underlining in (21)c marks the typical stress pattern, indicating contrastive focus on the quantifier (cf. chapter 4.5). The examples in (21) also show that all three readings exist in German speech, although (21)e is one of only two German COLL instances I found.

Since the examples in my collection were not extracted from a corpus, it is strictly speaking not admissible to evaluate them quantitatively. I cannot be sure that I collected all the *all…not* constructions I encountered, and therefore the relative frequencies of the three readings may be skewed. However, despite these caveats, the quantitative distribution of the German *all…not* constructions from my own collection is presented in Table 14. The general trend is so striking that I do not believe it can be attributed solely to biased collection of examples.

[36] DRS and SWR (cf. later examples) are Swiss and German radio stations, respectively.

Table 14. Distribution of readings of German *all…not* constructions from my own collection

	SPEECH		WRITING		Total
	n	%	n	%	n
NEG-Q	34	64%	8	53%	42
NEG-V	17	32%	7	47%	24
COLL	2	4%	--	--	2
Total	53	100%	15	100%	68

Not much can be said about the written examples because there are so few (only 15 cases). But German writing is already covered by the corpus data. Although the number of the spoken German cases is not huge either (54 instances, including one UNCL case), there are distinctly more than could be extracted and analysed from the spoken part of the BNC (33 cases). Comparing the distributions of the 53 spoken German cases that could be analysed to the distribution of readings in the written German corpora, the very high ratio of spoken NEG-Q readings (64%) is certainly striking. Despite well-founded reservations about analysing the collected examples quantitatively, I believe that the high number of spoken NEG-Q instances in Table 14 must be an indication of more than my collection preferences. If this assumption is correct, then the NEG-Q readings in German seem to occur mainly in speech rather than in writing.

A further indication that this may indeed be the case surprisingly comes from the written corpus C4. Of the 17 NEG-Q cases in C4, as many as seven (41%) occur in what could be called 'represented speech', for instance in dialogues in a novel or interviews in journalistic writing. Two of these cases are presented in (22)a and b.

(22) a. Ich ging aus dem Büro. Mattle folgte mir. "Ich an deiner Stelle wäre vorsichtig. Der Kerl ist mit allen Wassern gewaschen. Und *alle* haben wir *nicht* erwischt, die mit ihm zu tun hatten." [C4; NEG-Q]

b. Innerhofer: Ich wollte zu dem etwas dazusagen, es geht nicht einfach nur über die Institutionen zu arbeiten, man ist in der Institution sehr aufmerksam, und *alles* kann auch die Alternative Liste *nicht* leisten, weil sie zu wenig Geld hat. [C4; NEG-Q]

What can be tentatively concluded from these findings is that there are good indications that the NEG-Q reading, which occurs much less frequently in German than in English writing, is used more often in German speech. It would be desirable to investigate this hypothesis empirically, but unfortunately this kind of investigation will have to be postponed until sufficiently large spoken German corpora are available. In the meantime,

the collected examples at least show that *all…not* constructions exist in German speech and that all three readings are available. In addition, their qualitative analysis can yield interesting insights, as will be shown in later sections.

So although the available spoken material is very sparse, together with the collected spoken material some interesting results and trends can be summed up as follows. The frequency of English *all…not* constructions is roughly the same in speech (4pmw) and in writing (5pmw). The existence of formulaic *all…not* constructions does not contribute to a higher frequeny of *all…not* in speech as these formuaic cases seem to occur typically in written registers (there are only two formulaic cases in the spoken part of the BNC). The distribution of the three readings is different in speech: 45% NEG-Q (55% in writing), 30% NEG-V (16% in writing) and 24% COLL (29% in writing). However, the spoken dataset is very small and a high proportion of the relevant instances is UNCL, so these figures could be skewed and should not be seen as definite results. Although the German corpora do not contain spoken material, my own collection of German *all…not* constructions shows that all three readings exist in German speech. Interestingly, a cautious quantitative analysis of the German collection indicates that the NEG-Q reading may occur much more frequently in speech than in writing (NEG-Q cases make up 64% of all collected spoken examples). As it is methodologically questionable to analyse the collection quantitatively, this finding needs to be corroborated in future research. The fact that a high proportion (41%) of NEG-Q cases from C4 occur in 'represented speech', however, also supports the hypothesis that German *all…not* constructions are more frequently employed in a NEG-Q sense in speech than in writing. This would also fit well with the typical use of NEG-Q cases for contrastive emphasis (cf. chapter 4.5). Apart from such communicative functions, there are also indications that in some cases *all…not* constructions happen by accident due to the higher demands of online production on speakers.

The quantitative results presented in chapter 3 were only possible to arrive at by a detailed qualitative analysis of the data that included a consideration of the surrounding context, which is often a crucial factor for enabling disambiguation. In chapter 4, I will discuss in detail and try to pin down what kinds of contextual factors exactly help addressees disambiugate the potentially three-way ambiguous *all…not* constructions.

4 Disambiguation

Throughout this study, I have criticised the fact that the theoretical literature on quantifiers and negation is based mostly on made-up examples. These examples are usually very simple and neglect context, although the latter is of vital importance for the disambiguation of *all…not* constructions. Although the use of constructed examples is sometimes criticised, as for example in Baltin (1974: 32) and Horn (1989: 545, fn. 16), most researchers aware of the problem still use constructed examples, merely adding isolated lexical, syntactic or pragmatic constraints. It is therefore of interest to consider what kinds of linguistic features influence the interpretation of *all…not* constructions, or at least correlate with one of the interpretations. Zhou (2008: 57), the only researcher apart from Taglicht (ND), and Tottie and Neukom-Hermann (2010) to conduct a corpus linguistic study, voiced doubts concerning the view that the context is responsible for the generation of different readings, saying that "[i]t seemed impossible, to me, to extract commonality from the contexts that happen to have the same specific reading and attribute the generation of that reading to that commonality." Although I agree with Zhou that it is very difficult to extract such commonalities, I firmly believe that it is the context which is responsible for generating different readings, or rather for reducing the possibilities to usually just one plausible interpretation.

Naturally, 'context' is a very broad term and I will demonstrate that the relevant contextual clues can be found either in the same sentence or the wider linguistic context, that they can be lexical, syntactic, semantic or pragmatic, and that often world knowledge or specialist knowledge is required to be able to exclude incorrect readings. Moreover, real examples are often far more complex than those that are made-up with the aim of illustrating a particular problem or those constructed to be used in a particular task. Real examples are often not as 'neat', as has already been demonstrated in the section on problematic cases (3.3.2). Furthermore, the phenomenon of underspecification, which has also briefly been touched on in section 3.3.2, can lead to a situation in which all sentences cannot be assigned an absolutely clear meaning. Thus there is often a certain degree of fuzziness, which is excluded in context-free linguistic experiments.

4.1 Correlation with lexical items

Apart from the fuzzy sentences mentioned above, there are also many examples that can be interpreted with a high degree of certainty, at least when the context is known. Sometimes even a single lexical item in the same sentence is enough to force a particular reading. This is the case in examples (1)a-c, where the semantics of certain adjectives or predicates force COLL readings:

(1) a. The director's emoluments must also be included in the bandings in the note to the accounts unless *all* the directors' **aggregate** emoluments do *not* exceed 60,000. [CBY:3682; COLL]

b. But *all* this did *not* yet **add up** to a widespread expectation in London that Anglo-American relations would or should retain their wartime intimacy. [HY8:262; COLL]

c. As if *all* these factors, and their relationships, were *not* **complex enough**, there is another influence on the profit share which must be mentioned. [K8U:1148; COLL]

In (1)a, the adjective *aggregate* indicates that the sum of all the emoluments must not exceed 60,000. Sentence (1)b contains a collective predicate *add up*, which forces a COLL reading (apart from the fact that anaphoric *all this* is usually COLL). Example (1)c is a similar case, although it is more difficult to explain. The argument in sentence (1)c is that the more factors are involved, the more complex the situation becomes. Now if the writer argues that another factor will make things even more complex, we must assume that he first gave the reader(s) a summary of all the other factors. Thus, the adjective *complex* contributes to the interpretation of the sentence as COLL. Moreover, this sentence is similar to the COLL formulaic expression *as if all this wasn't enough*. In example (1)c, it is therefore the interplay of the structure of the sentence, its similarity to a COLL formulaic expression and the semantics of *complex* which force a COLL reading.

Similar cases of collective predicates or other collective expressions resulting in a COLL reading can be found in the German data.

(2) a. Doch *all* das **reichte** bislang *nicht* **aus**, um die Binnenwirtschaft aus ihrer Lethargie zu holen. [deWaC; COLL]

b. Zwar haben die Menschen in den letzten 20 Jahren eine unvorstellbare Computerpower angehäuft, aber *alle* bisher produzierten Rechner **zusammen** würden *nicht* **einmal reichen**, um das Schicksal einer Kaffeetasse für ein paar Minuten vorherzusagen. [deWaC; COLL]

Sentence (2)a involves the collective predicate *(aus)reichen*, 'to be enough', 'to suffice', prompting a COLL interpretation. The same predicate occurs in sentence (2)b. Although this collective verb would suffice on its own, the COLL reading is made even more explicit by the addition of *zusammen*, 'together' and the discourse marker *einmal*, which, in its combination with the negator *nicht*, means 'not even'. Sentence (2)b thus probably constitutes the most explicit and typical example of the COLL reading in the whole dataset. There are nine *all…not* constructions involving *(aus)reichen* in the German corpora, which can be seen as the German equivalent to the English formulaic expression *(as if) all this BE not enough*.

Collective predicates and other items inducing a collective meaning of *all* thus generally enforce a COLL reading. The typical sense of the COLL reading is that 'not even all of N make V possible'; in these cases negation has narrow scope, so that the COLL reading is more closely related to NEG-V than to NEG-Q.[1] However, in a few exceptional cases, the implication that more of N makes the predicate more likely is reversed; in such cases, negation has wide rather than narrow scope, and therefore these cases were analysed as NEG-Q rather than COLL. The NEG-Q analysis was even retained in the few cases with a collective predicate, scope being the more important determinant for the analysis.

Particularly good examples of the rare kinship between NEG-Q and COLL are provided by the sentences in (3). In these cases, the expression *auf einmal* should not be confused with the discourse marker *nicht einmal*, which contributed to a COLL reading in (2)b. Both expressions include the same word, *einmal*, and *alles auf einmal* has a collective meaning, too. But the latter expression, in combination with negation, induces a NEG-Q interpretation. This becomes evident in sentence (3)a, which can be paraphrased as 'es ist nicht alles auf einmal zu haben'[2] ('one cannot have all at once'), rather than 'nichts ist zu haben' ('nothing is to be had').

(3) a. Meine Anstrengung – intellektuell und emotional – die Partei zusammenzuhalten, hatte ihren Preis. Aber *alles* **auf einmal** ist *nicht* zu haben. [C4; NEG-Q]

[1] In fact, the close relationship between NEG-V and COLL is accentuated by the fact that the distinction between them can be fuzzy, as is illustrated in (i).

(i) Ich habe oft geweint, habe mich oft gefragt ob das so Sinn macht, habe oft überlegt, ob ich die richtige Partnerin für ihn bin. Auch *alle* Gespräche, die sehr offen waren, konnten mir *nicht* wirklich helfen. [deWaC; NEG-V]

This example was analysed as NEG-V, but one could also argue that all the talks together were not able to help the writer.

[2] This kind of NEG-Q paraphrase will be dealt with in more detail in chapter 4.6 in the context of external negation.

b. *Alles* **auf einmal** geht *nicht*, und ich glaube der Bedarf an Konferenzen ist unter den Lehrkräften auch reichlich gedeckt. [deWaC; NEG-Q]

In (3)a and b, the 'es ist nicht…' paraphrase, and thus the NEG-Q reading makes more sense because the usual implication that more N make V more likely is reversed. The meaning of (3)b is roughly that you can't have your cake and eat it, so the more N there are, the less likely V becomes. This reversed implication goes hand in hand with reversed scope, resulting in NEG-Q instead of COLL readings.

Several further lexical items, all semantically related to each other and to *auf einmal*, usually lead to NEG-Q readings; some of them are shown in examples (4)a-e. The (near-) synonyms *equal(ly)*, *alike* and *same* in (4)a-c, all give rise to a distributive reading of the quantified NP, with the Ns (in (4)a, for instance, *the eggs*) being compared to each other. What results are unambiguous NEG-Q *all…not* constructions ('not all the eggs are equally ready', 'not all sectors respond alike' and 'not all exercise is the same').[3]

(4) a. So as the time for hatching approaches, *all* the eggs may *not* be **equally** ready. [F9F:158; NEG-Q]

b. *All* sectors of the economy do *not* respond **alike** in times of war. [HXC:1042; NEG-Q]

c. As we know, exercise plays an important part in any diet/exercise routine, but the key thing is that *all* exercise is *not* the **same**. [BFG:582; NEG-Q]

d. What sense does it make to say that somebody knows that there is, for example, a beer in the fridge, wants a beer, is able to open the fridge door but doesn't open it? Something has got to give: *all* these italicized attributions can*not* be true of the **same** person **at once**. [A0T:565; underlined words are in italics in the original; NEG-Q]

e. "For some reason as yet unknown, the place got dangerous and the body had to be hidden until it could be buried." Coffin had been thinking. "*All* this activity does *not* have to have taken place under **one** roof?" He was thinking of the places under review: Belmodes, his house in Mouncy Street, Rose Hilaire's flat. All, or a mixture of all three places, were suspect. [K8V:2891; NEG-Q]

[3] I found one exceptional COLL case involving *same* in the BNC; the collective sense arises from the fact that the quantified Ns are not compared to each other (distributive), but to something else (in the present case *a few copper TNCs…*; cf. (i)):

(i) *All* of the Fortune 500 corporations do *not* have the same economic impact on the United States, for example, as a few copper TNCs have had on Chile, or fruit companies on Central America or mining corporations on Southern Africa. [HTV:1114; COLL]

In sentence (4)d, the writer complements *same* with *at once* (an English equivalent of *auf einmal*) to stress the fact that the enumerated attributions conflict with one another, so they cannot all be true at the same time (denial of the collective sense). In this example, it becomes clear that *same* and *at once* are semantically related; *at once* can often be paraphrased with *at the same time*, or *at one and the same time*. And indeed, the word *one* can function similarly and induce NEG-Q readings, as is the case in sentence (4)e. Another adverb and synonym of *at once*, which functions in a similar way but is not illustrated here, is *immediately*.

In addition to the lexical items presented so far, which induce COLL or NEG-Q readings, the presence of particular words can also lead to NEG-V interpretations of *all…not* constructions, as is shown in sentences (5)a-d:

(5) a. The facts are the facts, and I am compelled to record them with a plainness of detail which in the end offers the only means of extending that small degree of compassion, or perhaps even understanding, which *all* men in **whatever** circumstance or **however** degraded should *not* be denied. [ADA:1641; NEG-V]

b. I used to help with sticking the the er money onto the well this used to take about, you know, an hour *all* **these** kids did*n't* know what two pence was, did*n't* know what twenty pence was and ten pence and fifty pence and then we […]! [KE2:8349; SPOKEN; NEG-V]

c. A: Does it print it?
B: No, *all* **these** characters are *not* printed. [KP1:583; SPOKEN; NEG-V]

d. *Alle* **diese einzelnen** Kategorien sind *nicht* groß genug, einen eigenen Bereich zu bekommen. [deWaC; NEG-V]

In (5)a, the presence of *whatever* and *however* forces a NEG-V reading of the sentence by stressing the fact that the assertion really applies to the totality of men. Another way of stressing totality is shown in (5)b and (5)c; here, the presence of the demonstrative *these* following the quantifier *all* makes the NEG-V reading much more salient. In fact, *all* can be seen as a kind of intensifying item in these sentences since the propositional content does not change if *all* is eliminated. More examples of this kind will be discussed in chapter 5. The presence of a demonstrative, especially in the singular (*all this*), often indicates a COLL reading, but the word *einzeln* in (5)d forces a distributive reading, resulting in NEG-V rather than COLL (all the categories together might be big enough, but not each separately; as in sentences (5)b and c, the quantifier is optional in (5)d). Compared to German, English

could be argued to provide a more elegant means of making the distributive sense explicit with the quantifier *each*.[4]

Another lexical item that gives rise to NEG-V interpretations is *other* (both as noun and adjective), and its German counterpart *andere(r/s)*, respectively. Examples are provided in (6)a and b for English and (6)c and d for German.

(6) a. So having four children, one of them will have PKU, but *all* the **others** wo*n't*, they will be normal. [F8L:845; NEG-V][5]

b. "I think that's what makes Curve stand out from the rest of the pack," asserts Alex, "because *all* these **other** indie bands do*n't* seem to be interested in guitar music." [C9J:1846; NEG-V]

c. Ich wunderte mich, daß wir alle durch die Fahrertür einsteigen mußten. *Alle* **anderen** Türen dieses Vehikels ließen sich *nicht* öffnen. [C4; NEG-V]

d. "Nun ja, mein Gehilfe ist ein strammer junger Bursche, der den Mädchen gefällt. Er macht seine Arbeit gut, und *alles* **andere** interessiert mich *nicht*. Sie müssen ihn schon selber fragen." [C4; NEG-V]

In all the sentences in (6), *other* and *ander(e/s)* clearly indicate a NEG-V reading. The mechanism is the same in each case; for instance, in (6)c we have a context in which three of four doors cannot be opened. If sentence (6)c were uttered in the same context but without the addition of *anderen*, it would have to be interpreted as NEG-Q (not all doors could be opened because there was one that could be opened). But the presence of *anderen* makes clear that the writer is only concerned with the rest of the doors (those that cannot be opened), so the result is NEG-V instead of NEG-Q.

A similar mechanism, which reduces the set of the quantified NP to the extent that the predicate applies to the entire rest of NP, is the modification of the quantifier *all* with *almost* in English and *fast* (and such synonyms as *beinahe* or *praktisch*) in German. Numerous examples can be found in the corpus data, some of which are provided here as (7).

(7) a. Industrial discipline has always been harsher for manual than non-manual workers. Craig and Wedderburn showed that while almost all industrial workers have to clock in, **almost** *all* managers do *not* have to do so; […]. [FR4:460; NEG-V]

[4] Of course, English *every* and its German equivalent *jede/r/s* are also distributive. However, *each* arguably emphasises this distributive sense more than related words (cf. Biber et al. 1999: 275: while "[*e*]*ach* and *every* [both] refer to the individual members of a group and only combine with singular countable nouns", "[*e*]*ach* stresses the separate individual, *every* the individual as a member of the group.")

[5] In example (6)a, *PKU* refers to a genetic disease.

b. **Fast** *alle* in diesem Menu verwendeten Produkte stammen *nicht* aus der Schweiz. [C4; NEG-V]

c. Offenbar werden damit primär die Journalisten von Nachrichtenagenturen kritisiert, denn **praktisch** *alle* Tageszeitungsredaktoren waren im Zeitpunkt der Publikation des Communiqués noch gar *nicht* in dessen Besitz – […]. [C4; NEG-V]

Again, if *almost* or *fast* were removed from these sentences, the latter would have to be interpreted as NEG-Q rather than as NEG-V.

Finally, certain adverbs can contribute to rendering the NEG-V reading of *all…not* constructions more accessible. They include *only* and its synonyms *merely*, *just* and *solely*, in German *nur* and *bloß*, as shown in (8).

(8) a. But *all* of these developments can*not* be explained **solely** by reference to what goes on inside "Fleet Street". [EDU:1028; NEG-V]

b. Now, *all* these things are *not* **just** for this woman, they were for you, and they're for me. [KN8:193; SPOKEN; NEG-V]

c. *All* these men would *not* **only** write; they would also have to read, because the Minister is not able to read all the Cabinet agenda before he gets there, […]. [B0H:758; NEG-V]

d. Die sieben vorgelegten Kriminalakten hatten eines gemeinsam: In *allen* Fällen hatte die Polizei *nicht* **nur** wegen des Sachverhaltes ermittelt, in dem der Betroffene freigesprochen worden war, sondern auch in Zusammenhängen, in denen es nicht zu Freisprüchen gekommen war. [deWaC; NEG-V]

e. *Alle* zwölf Wohnungen waren auf Martinstag *nicht* **bloß** bereits vermietet und bezogen, sondern zwei der neuen Häuser bereits verkauft. [C4; NEG-V]

It should be pointed out that instances such as those presented in (8) are not typical cases of NEG-V *all…not* constructions. In fact, they could be argued not to be proper *all…not* constructions at all because the focus of negation seems to be the adverb *only* rather than the predicate. It is true that, strictly speaking, the predicates in (8) are not denied. These predicates are not exactly wrong, but rather too weak or incomplete.[6] In (8)b, for instance, *these things* **are** *for this woman*, but not just for her, and in (8)c the men **would** have to write. Therefore these constructions could perhaps be argued to represent local negation (Biber et al. 1999: 175; Quirk et al. 1985: 790f.) rather than clause or sentence negation. In German local negation is also referred to as SONDERNEGATION (*Duden* 2006: 923):

[6] See also section 4.6 on metalinguistic negation.

> One speaks of exceptional negation when the focus of negation encompasses only a single constituent or even only a single component of a constituent. When the focus encompasses the entire predicate, where applicable together with constituents, one speaks of sentence negation.[7]

This type of negation is often followed by a *but*-clause in English or a *sondern*-clause in German, as is the case in (8)d and e. However, the distinction between local and clause negation is in fact far from simple (cf. *Duden* [2006: 923]: "These terms are slightly misleading. In a logical sense, the sentence is negated in both cases […]. And corrections with *sondern* cannot only occur with exceptional negation, but also with sentence negation").[8] Some authors also argue that Sondernegation does not exist (for instance Zifonun et al. 1997: 220 and 853; cf. also section 2.3, note 15).[9] In English, the lack of *do*-support can be a clear syntactic indication of local negation (*Secondly,* all *these comments* ***stress*** not *a disavowal of communism, but rather a heightening of metaphysical angst once the reality of Soviet society was disclosed.* [FTW:455; NEG-V]).[10] However, such structures are still ambiguous between local and sentence negation in those cases where *do*-support is not necessary (for instance when the finite verb is the copula *be* or a modal verb).

To test whether the sentences in question represent local or sentence negation, one can use the Klima diagnostics for sentence negation (Klima 1964: 270; cf. section 2.3), for instance by appending a positive tag question to the examples in (8). Positive tag questions can be appended to all the sentences in (8), so they all represent sentence negation. According to the Klima diagnostics, the sentences in (8) are even valid examples of strong sentence negation because they also permit the *neither*-tag. Furthermore, the examples in question can be paraphrased with *no/none*, which is typical of NEG-V *all…not* constructions in general (for instance, ***none*** *of these developments can be explained solely by reference to […]* in the case of (8)a, or *in* ***keinem*** *der Fälle hatte die Polizei nur wegen des Sachverhaltes ermittelt, […]* in the case of (8)d). In view of these findings, it is justifiable

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7 The original reads: "Man spricht von Sondernegation, wenn der Fokus der Negation nur ein einzelnes Satzglied oder sogar nur einen einzelnen Bestandteil eines Satzglieds umfasst. Wenn der Fokus das gesamte Prädikat mit einschließt, gegebenenfalls zusammen mit Satzgliedern, spricht man von Satznegation."

8 "Diese Fachausdrücke sind etwas missverständlich: In einem logischen Sinn wird in beiden Fällen der Satz negiert […]. Und Korrekturen mit *sondern* können nicht nur bei Sondernegation, sondern auch bei Satznegation auftreten".

9 The distinction between 'Satz-' and 'Sondernegation' is also criticised by Jacobs (1982: 39f.).

10 Examples that lack *do*-support were excluded from the dataset, although they manifest the same kind of ambiguity between NEG-Q and NEG-V readings. Sentence (i) is an instance of a NEG-Q case without *do*-support ((i) is a quotation from one of Ann Radcliffe's writings and the "[*sic*]" is part of the BNC text):

(i) "*All* women possess *not* the Amazonian spirit of a Wolstonecraft [*sic*]; but, indeed, unremitted oppression is sometimes a sufficient apology for their throwing off the gentle garb of a female." [GT3:442; NEG-Q]

not to exclude such cases from the relevant dataset. They represent perfectly valid *all…not* constructions, and – as has been shown above – are interpreted in the NEG-V sense due to the presence of adverbs like *only* or *nur*. Since these adverbs are lexical items, the examples in question were included in the present section. However, as such examples are typically followed by a *but*-/*sondern*-clause, they could also be included in the following section on structural and syntactic correlations.

4.2 Structural and syntactic correlations

In section 4.1, numerous lexical features were presented that tend to induce particular readings. Since lexical items are extremely diverse in their semantics and other properties, it is likely that a larger dataset would yield more instances of lexical items that give rise to certain readings. On a more general level, one can also identify recurring syntactic structures correlating with the respective readings.

As was mentioned at the end of section 4.1, *but*- and *sondern*-clauses following *all…not* constructions usually lead to NEG-V (or COLL) readings.[11] Some additional examples (without *only* or *nur* in the *all…not* construction) are shown in (9). This kind of structural correlation seems to occur decidedly more often in German than in English. In German, there are no cases of NEG-Q *all…not* constructions followed by *sondern*-clauses.

(9) a. They learn how to form informed critical evaluations. And they Learn [sic] how to place their learning in a wider context. *All* these forms of learning are *not* learning that such and such is the case, **but** learning how to do such and such. [G0R:1251; underlined words are in italics in the original; NEG-V]

b. Das *alles* dient *nicht* dem Zweck, dem Leser einen realistischen Eindruck von dem besprochenen Werk zu verschaffen, **sondern** soll die Unkenntnis des Rezensenten in Nebel hüllen. [C4; COLL]

c. *Alle* vier zog es *nicht* in die Kunstmetropole Paris, die immer mehr an Bedeutung gewann, **sondern** in die ewige Stadt, nach Rom. [deWaC; NEG-V]

d. *Alle* im Text erwähnte Muster sind hier *nicht* abgedruckt, **sondern** im Leitfaden für die Durchführung des Zivildienstes zu finden. [deWaC; NEG-V]

The correlation between narrow scope negation interpretations and *but*-/*sondern*-clauses could be due to the fact that such structures promote an unmarked information structure

[11] This only holds true whenever the *but*-clause would be translated as a *sondern*-clause in German, not as an *aber*-clause.

with information focus being placed on the predicate, while the subject represents the unmarked topic. In section 4.5, I will show why and how this leads to narrow scope negation and explain the difference to wide scope negation in information-structural terms.

Another structural feature promoting NEG-V readings is a parenthetical insertion between the quantified NP and negation, as shown in (10)a and (11)a. Again, the correlation with narrow scope negation could well be due to the strengthening of unmarked information structure. The two types of parenthetical insertion lead to two different kinds of paraphrases. In the German example, the insertion must be transformed into a matrix clause, demoting the *all…not* construction to a *daß*-subclause (shown in (10)b). As a consequence, the finite verb must be moved to the end of the sentence. Whenever German word order displaces the finite verb from its position between the quantified NP and negation, wide scope negation is made impossible. The sentence can thus only be interpreted as NEG-V.

(10) a. In *allen* diesen Zahlen sind, **dies muss noch ausdrücklich vermerkt werden**, die Aufwendungen bei Mutterschaft *nicht* mitenthalten. [C4; NEG-V]

b. Es muss noch ausdrücklich vermerkt werden, dass in allen diesen Zahlen die Aufwendungen bei Mutterschaft nicht mitenthalten sind.

(11) a. *All* of these benefits, **whilst clear within the Bank**, were *not* widely known by our customers. [GX9:121; NEG-V]

b. All these benefits are clear within the Bank and/but not widely known by our customers.

The paraphrase for the English example has a different structure; rather than resulting in hypotaxis, the parenthetical insertion here functions more like a coordination of two predicates, as shown in (11)b. As was briefly mentioned in section 3.4.2 (footnote 17), coordinated structures always trigger NEG-V readings and were therefore excluded from his dataset by Taglicht (ND).

However, in contrast to Taglicht (ND), coordinated structures were not excluded in the present study. Coordination can occur both in the subject (examples (12)) and in the predicate, and in the latter case the negator can be part of the first ((13)b) or the second conjunct ((13)a and c).

(12) a. As he told the NSS last year, "*All* the great reformers **and** responsible people did*n't* dare pop their heads above the parapet when I was saying, 'Let's junk some of the rubbish, let's talk, let's get some real debate back.' …" [CAG:436; NEG-V]

b. Vater, Mutter **und** *alle* Verwandten freilich konnten den sonderbaren Buben *nicht* begreifen. [C4; NEG-V]

(13) a. Check that *all* cables are firmly in their sockets **and** have *not* worked loose. [HAC:2088; NEG-V]

b. *All* these people that tear about on the water on a Sunday do*n't* know what they're doing **and** are in desperate need of someone to manage them. [J3W:283; SPOKEN; NEG-V]

c. Warum machte er sich mit niemandem bekannt oder suchte Freunde oder Bekannte zu entdecken? *Alles* das fiel ihm schwer **oder** gelang ihm *nicht*, weil er zwar gut aussah, aber völlig unsicher war -. [C4; NEG-V]

Although coordinated *all…not* constructions are more frequent overall in German than in English (C4: 14.5%, deWaC: 11.4% versus BNC: 4.7% of all instances), the proportion of coordinated NEG-V cases is more or less the same in all three corpora (BNC: 18%, C4: 20%, deWaC: 16%). This is due to the fact that NEG-V readings are generally more frequent in German than in English. It could therefore be argued that the high incidence of coordination in German *all…not* constructions is one of the reasons for the higher proportion of NEG-V readings in German.

A special kind of coordination occurs in cases with several quantifiers. What we are dealing with is not a coordination of several subject NPs, but rather a coordination of quantifiers inside the subject NP.

(14) a. At this stage, **most if not *all*** expert systems can*not* be used by naive users; […]. [HXD:404; NEG-V]

b. In particular, the firm must make a "prescribed disclosure" to private customers in the UK about the fact that ***all* or most** of the FSA protections will *not* in fact apply. [J71:32; NEG-V]

c. But if a total consciousness is an organic whole, then **some or *all*** of these parts could *not* exist in the same character in another different sort of whole. [CS2:464; NEG-V]

d. Our problem is that while Mrs Iverson appears to have ingested that from which she died at the dinner party there is no dish from which **some or *all*** the guests did *not* share. [A0D:2796; NEG-V]

In the examples in (14), the quantifier is adjusted, either from the universal quantifier *all* to a less strong quantifier like *most*, or from a weaker quantifier (*some*) to *all*. Due to this

combination of quantifiers, the scope of negation can only be interpreted as narrow, resulting in a NEG-V reading. This kind of structure was only found in the English data, although it is possible in German as well.[12]

All the structural features presented so far give rise to narrow scope negation; in sections 4.2.1 to 4.2.3, I will consider a more global correlation that seems to exist between the status of the quantifier *all* as either pronoun or predeterminer, the complexity of the quantified NP and the various readings.

4.2.1 Correlation with the function of the quantifier *all* in English

In the literature on scope inversion, *all…not* constructions prototypically involve a quantified NP of the sort *all the boys*, in which the quantifier *all* functions as a predeterminer (as it is followed by a full NP).[13] The unmarked nature of this type of quantified NP seems to have had so great a hold on researchers that they never considered cases where *all* stands on its own as a pronoun without being followed by an NP. To my knowledge, the effect this may have on the interpretation of *all…not* constructions, or to be more cautious, the potential correlation between the status of the quantifier and the various readings, has never been investigated. This turns out to be an unfortunate oversight, as there are interesting correlations between these two variables.

In the present study, all instances of the quantifier *all* were classified as either pronoun or predeterminer, as shown below. Notice that cases in which *all* is followed by a partitive *of*-phrase were also classified as predeterminer uses.[14]

All is *not* lost	NP head, pronominal use, 'bare' *all*
All the boys, ***all*** of the boys	predeterminer

[12] For instance sentence (i), found here (accessed 14 May 2016): <http://www.linguee.de/deutsch-englisch/uebersetzung/manche+oder+alle.html>
(i) **Manche oder *alle*** Telefonbucheinträge werden *nicht* korrekt angezeigt. [NEG-V]

[13] For instance, Carden (1970a), Heringer (1970) and Stokes (1974) exclusively used sentences with *all* as predeterminer.

[14] Quirk et al. (1985: 381) point out that "[t]echnically, *all* […] is a pronoun when followed by *of*." However, from a functional perspective, *all of* can be viewed as a predeterminer.

Table 15. *All* as pronoun or predeterminer (without or with a following NP) in the BNC[15]

	PRONOUN		WITH NP		TOTAL
	n	%	n	%	
NEG-Q	162	99%	93	30%	255
NEG-V	1	0.6%	79	26%	80
COLL	1	0.6%	133	44%	134
TOTAL	164	100%	305	100%	469

Table 15 shows that when *all* is used as a pronoun, it almost invariably receives narrow scope (in other words, negation has wide scope), resulting in a NEG-Q reading. There are just two exceptions in the whole English dataset. One of these exceptions is a COLL case where the pronoun *all* is followed by a relative clause, so it could be argued that it is functionally more complex than 'bare' *all* and therefore behaves differently than the other pronoun cases. This exceptional COLL case is given here as (15):[16]

(15) The truth is that for a weekly paper in something as effervescent and ethereal as pop, *all* that we've done over the last 40 years is *not* as important as what we do next week. [CHA:1470; COLL]

The other exception is a single NEG-V case where *all* is a pronoun, given here as example (16).

(16) The rather tacky set, the lucklustre performances, the script from David Straun and Heather Williams that lurches from trite audience participation to over-the-head jokes (would any primary-school child get the one about water privatisation?), *all* did*n't* seem to matter as the company of four scampered around with their well-intentioned tale of how the white man destroyed the American Indians. [AA9:180; NEG-V]

In (16), the quantifier functions like an anaphoric pronoun, referring back to or replacing the preceding enumeration. *All…not* constructions that involve anaphoric reference are usually realised with an anaphoric demonstrative pronoun following the quantifier: *all (of) this*; in view of the rest of the dataset, example (16) can be considered a fairly unusal ellipsis of this demonstrative pronoun. As will be shown below, cases of anaphoric

[15] The results shown in Table 15 are highly significant: χ^2=200.48, df=2, p<0.0001, Cramer's V=0.654.

[16] The single pronominal NEG-Q case followed by a relative clause is the famous *all-that-glitters* proverb, shown in (i):

(i) The point to bear in mind is that *all* that glisters is *not* gold, and there has been a price to pay for all the splendour. [CMM:156; NEG-Q]

reference, mostly realised as *all this* or *all these NP*, are typically analysed as COLL, sometimes also as NEG-V. Example (16) is a borderline case: it resembles the COLL cases with *all this* but was analysed as NEG-V because *none of this mattered* seems a better paraphrase than *all these things taken together didn't matter*.

These two exceptional examples show that narrow scope negation is not impossible with pronominal *all*. However, they are clearly marginal cases and the strong correlation between pronominal *all* and the NEG-Q reading cannot be disputed. Sentences (17)a and b are typical examples of such NEG-Q readings with 'bare' *all*.

(17) a. I recognized that *all* would *not* be plain sailing. [ABU:1417; NEG-Q]

b. It usually dawns on you slowly that *all* is *not* as it would appear on the surface. [B2F:320; NEG-Q]

While pronominal *all* can thus serve as a fairly accurate means of predicting NEG-Q readings, things look different when *all* functions as a predeterminer. These are the cases with potential for real three-ways ambiguity. This becomes even more evident when the formulaic expressions mentioned in section 3.4.4 are distinguished from the free uses, as shown in Table 16.

Table 16. *All* as NP head or predeterminer in the BNC; free and formulaic uses

	PRONOUN		WITH NP		TOTAL
	free	formulaic	free	formulaic	
NEG-Q	21	141	91 (34%)	2	255
NEG-V	1	--	79 (29%)	--	80
COLL	1	--	98 (37%)	35	134
Subtotal	23	141	268 (100%)	37	
TOTAL	164		305		469

Briefly returning to the pronominal cases, Table 16 shows that formulaicity is another important factor interacting with the status of *all*: the vast majority of the pronominal NEG-Q cases are formulaic (141/162 or 87%). As can be seen from column four in Table 16, in English it is the free predeterminer uses where we get a more or less equal one-third probability for each of the three possible readings. Three typical examples of this kind of construction, one for each reading, are shown in (18)a-c:

(18) a. There are a few well-rehearsed cases in which *all* the information provided by a text is *not* used to interpret it. [B2X:412; NEG-Q]

b. Here *all* infringements of that space from external sources are *not* permitted. [FE6:732; NEG-V]

c. "It's a tragedy that *all* those millions of pounds of investment are *not* going to create many jobs." [B7F:42; COLL]

It is examples such as (18)a-c that show a real potential for three-way ambiguity and where intonation can be used to manipulate readings. Incidentally, these are exactly the kind of examples used by researchers investigating scope inversion phenomena (cf. *All the boys didn't leave*). If the aim is to find out what other factors may influence the interpretation of such ambiguous sentences, this may be a valid choice. If, however, the aim is to investigate *all…not* constructions in general, a lot of information is lost by reducing the dataset to merely one particular kind of construction.

4.2.2 Complexity of the universally quantified NP

For English *all…not* constructions, we have seen that the status of *all* as either pronoun or predeterminer correlates with the various readings. However, this correlation could be due not so much to the grammatical status of *all* as to the complexity of the universally quantified subject NP. When *all* is a pronoun it usually stands on its own and the subject NP is thus very simple and short. In contrast, when *all* is a predeterminer the subject NP can be quite long and complex. The COLL pronominal case, in which the pronoun *all* is followed by a relative clause and thus unusually complex, could be an indication of the validity of this hypothesis. In order to verify whether it is complexity rather than, or in addition to, the grammatical status of *all* that plays a role here, I classified all the predeterminer cases as follows: demonstrative (*all* + demonstrative pronoun *this*), personal pronoun (*all* occurs together with a personal pronoun), simple NP (*all* + N), one-way complex (*all* + N with either pre- or post-modification or coordination) and two-way complex (*all* + N with at least two of the one-way complex features). Examples are given below:

all (of) this (/that)	+ demonstrative/+ *this*
all of us, (they all)	+ personal pronoun
all boys, all (of) the boys, all these boys	simple NP
all good boys, all the boys in town, all boys and girls	complex-1
all good boys in town	complex-2

It is of course also imaginable that the force at work here is simple length rather than complexity, but the above categorisation should serve as a sufficiently good approximation to both for testing the hypothesis.

Table 17 shows the distribution of readings according to complexity of the quantified NP. The same results are given as percentages (in relation to totals of each reading) in Table 18. The two pronoun cases with relative clauses were combined with the rest of the relative clauses and form part of the category 'complex', as complexity seems to be a stronger factor than the function of *all*. The first two columns in the 'complex' category originally formed a part of 'simple NP'. However, the discussion of the results will show why it is interesting to have a separate category for *all* followed by a demonstrative pronoun (usually *this*). The instances when *all* occurs with a personal pronoun are marginal in English, but were isolated for better comparability with German (cf. section 4.2.3).

Table 17. Complexity of quantified NPs in BNC (free and formulaic)

	basic	**complex**							**TOTAL**
	'bare' *all*	+ *this*	+ *of* pers. pron.	simple NP	compl-1	compl-2	(NP) + rel. cl.	Total complex	
NEG-Q	161	--	2	59	28	4	1	94	255
NEG-V	1	8	--	31	32	7	1	79	80
COLL	--	44	--	24	40	25	1	134	134
TOTAL	162	52	2	114	100	36	3	307	469

Key: Cells including formulaic expressions are shaded lightly

Table 18. Complexity of quantified NPs in BNC (free and formulaic); percentages

	basic	**complex**							**TOTAL**
	'bare' *all*	+ *this*	+ *of* pers. pron.	simple NP	compl-1	compl-2	(NP) + rel. cl.	Total complex	
NEG-Q	63%	--	1%	23%	11%	2%	0.4%	37%	100%
NEG-V	1%	10%	--	39%	40%	9%	1%	99%	100%
COLL	--	33%	--	18%	30%	19%	1%	100%	100%
Total	35%	11%	0.4%	24%	21%	8%	0.6%	65%	100%

Key: Cells including formulaic expressions are shaded lightly

Focusing on the NEG-Q row in Tables 17 and 18, we can see that the probability of a NEG-Q reading depends on the complexity of the quantified NP. NEG-Q readings occur most frequently with 'bare' *all* (63% of all NEG-Q cases), and become increasingly less frequent the further we move to the right, that is to say the more complex the NPs following *all* get

(23% with simple NPs, 11% with complex-1 NPs, only 2% with complex-2 NPs and a single instance with a relative clause; cf. footnote 16). There is thus a close connection between NEG-Q readings and the complexity of the quantified NP. NEG-Q readings show a clear preference for simpler structures, in particular 'bare' *all* functioning as a pronoun.

The NEG-V and COLL readings, on the other hand, virtually never occur with 'bare' *all*. They apparently require that *all* be followed by an NP. Concerning the complexity of the particular NP following *all*, there is no such clear correlation with NEG-V readings as with NEG-Q readings. Most of the NPs following *all* in NEG-V instances are simple or complex-1. The majority of instances with very complex NPs following *all* are COLL (25/36 or 69% of all complex-2 cases). This tendency is related to the fairly frequent formulaic *in-the-world* construction (cf. section 3.4.4); by definition, all the NPs occurring in this kind of expression are at least complex-1 because they are modified by *in the world*. This formulaic expression is responsible for 15/40 (38%) COLL complex-1 cases and 11/25 (44%) COLL complex-2 cases. The other formulaic COLL expression *all this* BE *not enough* accounts for 9/44 (20%) cases of the demonstrative *all this* category. Even without this formulaic expression, however, demonstrative *all this* typically results in a COLL reading (I will come back to this issue in chapter 5).

In a nutshell, then, if *all* occurs as a pronoun and is not followed by an NP, the *all…not* construction is almost invariably interpreted as NEG-Q, while it is not the case that NEG-Q readings can only occur with *all* as pronoun. In about one third of all NEG-Q cases, *all* is a predeterminer followed by an NP. The more complex the NP gets, the lower the probability of a NEG-Q reading. It seems that speakers avoid using *all…not* constructions in the NEG-Q sense if the NP following *all* is too complex. Presumably, they prefer using *not all* constructions in such cases.

The NEG-V and COLL readings, on the other hand, only occur when *all* is a predeterminer followed by an NP. In other words, *all* as a pronoun in the NEG-V sense does not occur; it seems that when the quantifier is a pronoun the NEG-V meaning has to be expressed by a lexicalised universal negator *nobody* or *nothing*. This phenomenon is known as negative attraction (NEGATTRAC), the rule that if a linguistic structure is interpreted as a positive universal quantifier applied to a simplex negative predicate, then the negative must be incorporated with the quantifier in the surface structure (adapted from Labov 1972b: 801). NEGATTRAC is best known to apply to *any* when followed by nexal *not*. The ungrammatical status of this combination is illustrated by sentence (19)a , quoted from Labov (1972b: 800):

(19) a. *Any boy didn't leave.
b. ?Each boy didn't leave.
c. Every boy didn't leave.
d. All the boys didn't leave.

Labov (1972b: 800) claims that "NEGATTRAC […] seems to apply with moderate strength to *all* and *every*, strongly to *each*, and categorically to *any*" (cf. examples (19)a-d). As we have seen, this rule may have to be refined, so that, in the NEG-V sense, NEGATTRAC only applies with moderate strength to *all* if it is a predeterminer, but categorically if it is a pronoun.

4.2.3 Function of *all* and NP complexity in German

In English, formulaicity, the status of *all* as either pronoun or predeterminer, and the complexity/length of the quantified NP are thus clearly strong factors correlating with the three readings. German seems to lack formulaic *all…not* constructions comparable to English (cf. section 3.4.4). But the other two factors, the status of *all* and NP complexity, might still be variables worth looking at. Results for German are shown in Table 19 and 20. Figures for C4 and deWaC were combined for the sake of better comparability to the figures for English. The percentage data from Tables 18 and 20 are graphically combined in Figure 8 to make similarities and differences between English and German more readily apparent.

Table 19. Complexity of quantified NPs in C4 and deWaC (combined)

	basic	**complex**							**TOTAL**
	'bare' *all*	+ *das*	+ pers. pron.	simple NP	compl-1	compl-2	(NP) + rel. cl.	Total complex	
NEG-Q	31	--	--	12	5	1	2	20	51
NEG-V	17	31	26	103	43	16	60	279	296
COLL	1	129	1	15	16	7	3	171	172
TOTAL	49	160	27	130	64	24	65	470	519

Table 20. Complexity of quantified NPs in C4 and deWaC (combined); percentages

	basic	**complex**							**TOTAL**
	'bare' *all*	+ *das*	+ pers. pron.	simple NP	compl-1	compl-2	(NP) + rel. cl.	Total complex	
NEG-Q	61	--	--	24	10	2	4	39	100
NEG-V	6	10	9	35	15	5	20	94	100
COLL	1	75	1	9	9	4	2	99	100
TOTAL	9	31	5	25	12	5	13	91	100

A number of striking similarities, but also some differences, can be discovered when comparing the English and German data along the suggested lines. Considering first the NEG-Q reading, sections 3.4.3 and 3.4.5 already showed that its overall frequency is much lower in German than in English. However, despite this difference and despite the lack of formulaic expressions in German, 'bare' *all* cases account for more or less the same proportion of NEG-Q cases in English (63%) and in German (61%). Also the relative frequencies of the various complex categories are almost eerily similar in the two languages: there are no NEG-Q demonstrative cases with *all this* or *all das*; basically no NEG-Q cases with personal pronouns (none in German, one in English); the proportions of the NP categories are essentially the same (simple NPs account for 23% of NEG-Q cases in German and 24% in English; complex-1 NPs can be found in 10% of German NEG-Q cases and 11% in English; and complex-2 NPs both make up 2%). NEG-Q readings with relative clauses are very rare with one instance in English and two in German.[17]

[17] Note that I found two German cases of pronominal *all* followed by a relative clause which are still interpreted as NEG-Q, despite the complexity of the structures. However, as can be seen in (i), in this case the relative clause is separated from its antecedent so that the *all…not* construction looks like a regular pronominal case. The lengthy relative clause thus does not interfere with a NEG-Q interpretation.

(i) Ich ging aus dem Büro. Mattle folgte mir. "Ich an deiner Stelle wäre vorsichtig. Der Kerl ist mit allen Wassern gewaschen. Und *alle* haben wir *nicht* erwischt, **die mit ihm zu tun hatten**." [C4; NEG-Q]

The other NEG-Q pronominal case with relative clause will be discussed in section 5.3 as example (19)c.

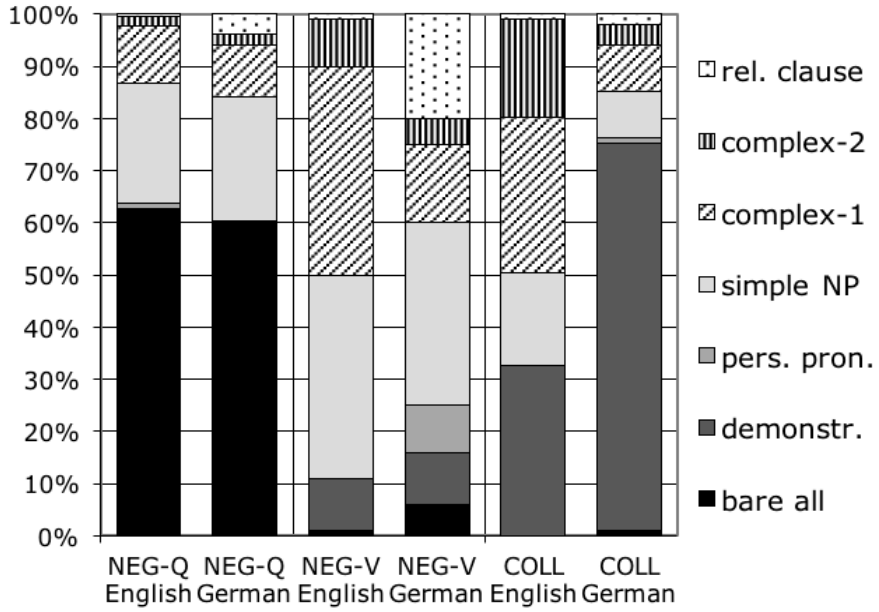

Figure 8. Complexity of quantified NPs in English and German; percentages

Some differences between English and German can be found when considering the NEG-V reading. In German, NEG-V cases occur somewhat more often with 'bare' *all* than in English (one instance), but still only 17 instances or 6% of all cases. It should be noted that the majority of these pronominal *all* NEG-V cases are special in certain ways and may be seen as exceptional. Two of them are postmodified with a PP and should therefore rather be part of the complex categories. They are provided here as (20)a and b:

(20) a. "*Alles* unter 5% Marktanteil ist *nicht* wahrnehmbar", so Dellings Zielvorstellung. [deWaC; NEG-V]

b. Das Hotel selbst ist ein beeindruckendes Bauwerk. *Alles* im Inneren ist *nicht* so toll. Das Essen war wirklich sehr schlecht und die Bedienung sehr unfreundlich. [deWaC; NEG-V]

Furthermore, three of these pronominal *all* NEG-V cases occur without a verb, so that strictly speaking they should not have been part of the dataset as the criterion for inclusion was the presence of a finite verb between quantifier and negation. However, a few verbless cases were included nonetheless because the verb in these instances is clearly elliptical and can easily be recovered. Two of them are given here as (21)a and b:

(21) a. *Alles nicht* neu, *alles nicht* aufregend, nur die Ruhe bewahren. [C4; NEG-V]

b. Da stehen Allzweckreiniger (enthalten Tenside), Desinfektionsmittel (Phenole, Aldehyde), Stahlfix - (Lösungsmittel), Glasreiniger (Ammoniak), besonders teuflischer Abflußreiniger und Möbelpolitur. *Alles nicht* nur mehr oder weniger giftig und gefährlich, sondern im Grunde laut Pick - auch tatsächlich überflüssig. [C4; NEG-V]

Of the remaining twelve cases, six are coordinated and one is followed by a *sondern*-clause (as is (21)b). Both these features, as we have seen in section 4.2, induce NEG-V readings. It seems then that they represent stronger constraints than the status of *all*, since they can evoke NEG-V readings even when *all* is a pronoun. The coordinated cases are exemplified in (22)a and b:

(22) a. Du weißt, daß der Verwaltungsrat viel von dir hält; *alle* waren vor den Kopf gestoßen **und** konnten sich dein Verhalten *nicht* erklären. [C4; NEG-V]

b. *Alles* war rechtens **und** *nie nicht* Verrat. [deWaC; NEG-V]

If all these exceptional and otherwise constrained cases are deducted from the German pronominal NEG-V cases, we are left with only 5/17 which really contradict the English pattern that 'bare' *all* is restricted to NEG-Q readings.

Moving on to the NEG-V cases where *all* is followed by demonstrative *this/das*, both English and German behave in the same way again: *all this/all das* cases account for 10% of all NEG-V instances in each language. The proportion of simple NPs is also quite similar with 35% in German (103/296) and 39% in English (31/80). The similarities as far as the NEG-V reading are concerned, however, end here. While the proportions of predeterminer cases are already slightly higher for simple NPs in English, this trend is even stronger for the complex NPs: complex-1 NPs account for 40% of the English NEG-V cases, but only 15% of the German ones; and the complex-2 NPs are more frequent in English as well with 9%, in contrast to German with 5%.

The higher share of predeterminer cases in English is compensated for in German by two categories more or less nonexistent in English. The first is the use of the quantifier *all* in combination with a personal pronoun. In English, there are only two (NEG-Q) instances of this pattern, both involving a partitive *of*-phrase (*all of you, all of them*). There is only one UNCL English case where the personal pronoun is directly followed by the quantifier, which is the usual structure in German.[18] The English case is presented in (23):

[18] "In Verbindung mit einem Personalpronomen steht *all* hinter diesem: sie alle, uns alle [etc.]" (*Duden* 2006: 318; "when *all* is combined with a personal pronoun, the former follows the latter").

(23) Well they *all* have*n't* got a soft mum and dad like you.
[KCF:3193; SPOKEN; UNCL]

This kind of structure makes up 26/296 or 9% of the German NEG-V cases. Of the 26 German cases, the quantifier directly follows the pronoun in 25 instances, as shown in (24)a and b. In the remaining case, the finite verb intervenes between quantifier and personal pronoun, as exemplified in (24)c. The *Duden* grammar (2006: 319) notes that "*all* can also be separated from its associated expression, especially if the latter is the subject or the direct object."[19] For the sake of emphasis, *all* can also be fronted from its more usual position (shown in (24)c'), resulting in sentences like (24)c. Unfronted cases, of the type of invented (24)c', were not included in the dataset because the requirement that the finite verb must appear between quantifier and negation is not met here. The latter cases are always NEG-V and therefore not ambiguous.

(24) a. **Sie** *alle* passen *nicht* in das Bild vom "normalen Menschen", das die Massenmedien täglich verbreiten. [deWaC; NEG-V]

b. Das Gros der Band besteht aus alten Freunden, wir kennen uns lange, in- und auswendig. **Wir** *alle* hatten vorher *nicht* gespielt, das fing alles bei Null an. [deWaC; NEG-V]

c. *Alle* wollen **sie** es besser wissen und lassen es *nicht* an guten Ratschlägen fehlen. [deWaC; NEG-V]

c'. **Sie** wollen es *alle* [*nicht*] besser wissen …

Of the 26 pronoun cases, 15 occur with the third person plural pronoun *sie* (as shown in (24)a), ten with the first person plural pronoun *wir* (as shown in (24)b) and one with the dative first person plural pronoun *uns*. All German pronoun cases are NEG-V except for one COLL instance. Since no wide scope negation cases were found among the German instances involving personal pronouns, it may be that these are generally unambiguous, even when the finite verb is placed between quantifier and negation. This hypothesis could be investigated in another study involving a larger German sample.

The second category that is mainly responsible for the smaller proportion of predeterminer cases in German is the one involving relative clauses.[20] In English, *all…not* constructions with relative clauses modifying the quantified phrase are very rare, with only

[19] "[*All* kann] auch vom zugehörigen Ausdruck getrennt werden, vor allem wenn es sich bei diesem um das Subjekt oder das Akkusativobjekt handelt."

[20] Note that in Tables 17-20, all instances with relative clauses were counted as being part of this category, whether or not *all* is a pronoun or a predeterminer. For example, a case with both a complex-1 NP and a relative clause was only counted in the category 'relative clauses' in order to avoid double counts.

one occurrence in each of the three readings (less than 1% of all instances). In German, by contrast, structures involving relative clauses account for 65/517 cases or 13%. The majority of these with 60 cases are NEG-V. In other words, cases of *all* followed by a relative clause constitute 20% of all German NEG-V cases. Structures with relative clauses thus represent one major difference between English and German *all…not* constructions.

Further differences can be found when considering the COLL readings. As far as the pronominal cases are concerned, the two languages are quite similar: COLL readings do not occur with pronominal 'bare' *all*.[21] However, a big difference between the two languages is discernible in the next category 'demonstrative'. While demonstrative/anaphoric *all this* is already quite frequent in English, with 33% of all COLL instances or 11% of the whole sample, *all das* accounts for an even greater share in German, with as much as 75% of COLL cases or 31% of the whole German dataset.

The high ratio of *all das* in German means, of course, that there is only a small share left for the other categories; it therefore comes as no big surprise that the COLL pre-determiner cases are much less frequent in German than in English (simple NPs: 9% in German vs. 18% in English; complex-1: 9% in German vs. 30% in English; complex-2: 4% in German vs. 19% in English). As noted before in section 4.2.2, the COLL formulaic expression with *in-the-world* is at least partly responsible for the higher incidence of complex predeterminer cases in English.

To sum up, 'bare' *all* is much more frequent in English, with 35% of all cases, than in German with only 9%. This is due to the existence of the NEG-Q formulaic expressions in English (*all is not lost* ect.). If one disregards the formulaic expressions, 'bare' *all* makes up only 23/291 or 8% of all cases in English, which is comparable to German. Apart from the prominence of formulaic *all…not* constructions in English, the two languages differ mainly in the more frequent use of COLL *all das*, personal pronouns (NEG-V) and relative clauses (mostly NEG-V) in German. NEG-V and COLL predeterminer cases (disregarding relative clauses) are less frequent in German (218/517 or 47% of all NEG-V and COLL cases) than in English (134/291 or 75% of all NEG-V and COLL cases).

[21] There is one exception in German, given here as (i):
(i) *Alle* **gemeinsam** trugen *nicht* **nur** zur Verstümmelung des Nachtgesichts der an sich friedlichen Kleinstadt bei, es gelang ihnen auch, das Tagesgesicht Kitzbühels zu verzerren. [C4; COLL]
Sentence (i) is one of the difficult cases with *nicht nur* that could be seen as local negation rather than clause negation. It is followed by an implicit *sondern*-clause and was analysed as COLL because of the explicitly collective adjective *gemeinsam* ('together').

4.3 Wider linguistic context

In sections 4.1 and 4.2, I showed that a number of factors, both lexical and structural, can determine or at least influence the interpretation of *all…not* constructions. Sometimes, however, it is the wider linguistic context that indicates the intended meaning. Often it is difficult to pin down what exactly contributes to disambiguation, but sentences (25)a-d were chosen as fairly clear illustrations. In sentence (25)a, the writer actually interprets the sentence himself by explicitly talking about the implication (*implies that some therefore do well*). The writer thus makes the typical **Q**-based implicature (cf. section 2.3; Horn, 1989: 195) from the **O**-corner quantifier (*not all do all things well*) to the **I**-corner quantifier (*some do well*) (note that (25)a is an example from poetry).[22] Similarly, in (25)b the reader can infer from the writer's conclusion, *not everything should be believed*, that *not all is true* (NEG-Q); since only *some things ought to be doubted* it is not the case that *nothing is true* (NEG-V).

(25) a. "*All* Do *Not* All Things Well". /Implies that some therefore /Do well, for its own sake, /One thing they undertake, /Because it has enthralled them. [G1V:866; NEG-Q]

b. *All* is *not* true, so not everything should be believed; some things ought to be doubted. [C8V:579; NEG-Q]

c. I found it most questionable that Forward Publishing, having won fifteen awards – including a class winner – was not mentioned once throughout the whole ceremony. Had it been the form that *all* agencies were *not* mentioned, this may have been acceptable, but to be forced to listen to a litany of other agency names – not least Barkers Trident – without a single mention of our own was deplorable. [HAK:64; NEG-V]

d. INCOMPLETE INTERPRETATIONS OF ANAPHORS
There are a few well-rehearsed cases in which *all* the information provided by a text is *not* used to interpret it. For example, people often fail to see what is wrong with asking of an air crash on a national frontier "where were the survivors buried?" or they fail to see why saying that a book "fills a much-needed gap" is an insult to its author. [B2X:411; NEG-Q]

The indication of the intended meaning is not as explicit in (25)c, but it is still very clear from the context that the construction must be interpreted as NEG-V and paraphrased as *no agencies (at all) were mentioned*. While, as in earlier examples, the word *other* plays a role in this case (*a litany of other agency names*), it is not the only pointer to the intended reading. The clues are distributed in the preceding and following context. The writer is

[22] It is a by Thom Gunn (1992) from *The Man with Night Sweats*.

clearly angry that his own company was not mentioned and feels that it has been deliberately neglected. In contrast to (25)c, the relevant context in example (25)d can be pinned down easily. Here it is already the title of the text (given in capital letters), which clarifies that a NEG-V reading is out of the question (interpretations are merely incomplete, so *not all* information is used (NEG-Q)).

Similar examples can also be provided from the German corpora. In a different context, (26)a could also be interpreted as NEG-Q (*nicht alles wäre so gekommen*), but the subsequent phrase *alles wäre anders gekommen* makes it clear that the *all…not* construction is intended as NEG-V (*nichts wäre so gekommen*). In (26)b we find the opposite case. Here, the author first lists a number of superstitious practices related to construction work and then goes on to say that he cannot deal with all of them (NEG-Q). In a different context, however, the same *all…not* construction could be interpreted as NEG-V, for example if the writer were to explain in detail what tools were used in historic construction work and then to apologise that s/he cannot say anything about kinds of superstition related to construction work.

(26) a. *Alles* wäre *nicht* so gekommen, wie es gekommen ist, wenn Minna nicht gesagt hätte, daß ich zu jung bin, alles wäre anders gekommen, und niemand hätte mir mit der Erziehungsanstalt drohen müssen. [C4; NEG-V]

b. Als Grundstein vieler Burgen wird ein Stein von den Zinnen einer bisher noch nicht bezwungenen Feste verwendet. Auf *alle* Varianten des Aberglaubens am Bau kann hier natürlich *nicht* eingegangen werden. [deWaC; NEG-Q]

c. Keiner der Propheten Gottes hatte ein Buch oder Regeln oder Anweisungen, die geheim waren. Nur die schlechten Dinge müssen unter allen Umständen verborgen bleiben. Doch *alles* Gute braucht die Öffentlichkeit überhaupt *nicht* zu fürchten!" [deWaC; NEG-V]

It is not surprising that the context can play such an important disambiguating role. The same applies to all linguistic levels of interpretation, as can be seen in (26)c. Here the context helps decide whether the quantified NP is the subject or the direct object, as both *alles Gute* and *die Öffentlichkeit* could be either nominative or accusative case and in German the subject and object functions are not restricted to a particular position in the sentence either. So is the intended meaning that the public has no need to fear everything that is good, or rather that everything that is good need not fear becoming public? In isolation, the sentence might be interpreted in the former sense, but in this particular context, the latter is clearly the intended meaning.

4.4 World knowledge and specialist knowledge

Finally, there are examples that can only be disambiguated with the help of knowledge of the particular situation, of a specific culture, of the world or of a specialist topic. Cultural knowledge is important for the disambiguation of sentence (27)a. If the reader knows that Sainsbury's is a supermarket, s/he will automatically access the NEG-Q reading for *all supermarkets don't put GH at the checkout*. This is a very good example to illustrate that if something in the context is changed, the interpretation can or even must change as well. If example (27)a, with the same context, read *I can't think why all the* other *supermarkets don't put GH at the checkout*, then the correct interpretation would be NEG-V.

(27) a. Many of you may have noticed that Good Housekeeping is now on sale at the checkout in Sainsbury's, which has gone down brilliantly with shoppers, as I discovered when I visited my local London branch. I can't think why *all* supermarkets do*n't* put GH at the checkout. [ED3:19; NEG-Q]

b. The jigsaw won't fit in the suitcase. It's back in its box now, but it's still pretty big – so I have to stick it in with the dirty washing. I hope *all* the bits do*n't* fall out of the box. [A74:1529; NEG-V]

c. Die selbständigen Arbeiter kamen den Exporteuren gelegen, da sie billiger arbeiteten: Das Fabrikgesetz von 1878 verbot den Fabriken die Kinderarbeit und legte eine maximale Arbeitszeit fest. An *all* diese Regelungen mussten sich die Heimarbeiter *nicht* halten. [C4; NEG-V]

d. It is obvious that *all* point mutations affecting the D-stem or the size of the extra arm did *not* cause any discriminatory effects on the identity elements for the tRNA (m 5 C49) methyltransferase. [FTC:908; UNCL]

Concerning sentence (27)b, world knowledge tells the reader that the writer probably does not want any bits at all to fall out of the box, rather than that the writer would wish only for some bits not to fall out of the box because s/he might then loose the others. World knowledge also tells us that the *Fabrikgesetz* in (27)c only applies to people working in factories so that none of these rules (rather than not all of them) are relevant to home-workers. Example (27)d was analysed as UNCL. Although I lean towards a NEG-V reading (probably because the NP following *all* is very complex), I lack the specialist knowledge to be sure of this interpretation, but biochemists – i.e. the implied addressees – would probably be able to disambiguate the sentence.

The relevance of the context for the disambiguation of *all…not* constructions thus manifests itself on all linguistic levels (lexical, syntactic, semantic, pragmatic), and comprises knowledge of the situation, the culture, the world or a specialist field. Usually

the complex interplay of all these factors is responsible for the disambiguation of a sentence. It is therefore only to a very limited degree that rules (or rather tendencies) can be formulated that would predict particular readings for particular structures. For example the presence of the word *other* may indicate a NEG-V reading, or a complex NP following *all* minimises the probability for NEG-Q. However, it would be extremely difficult to write rules that would allow a computer program to imitate human interpretations of *all…not* constructions, especially when knowledge of the world is required.

In chapter 2, I gave an overview of various approaches to *all...not* constructions and their explanations for the different readings. The emerging picture is rather complex and, as has also been shown in the analysis of the corpus data so far, the factors contributing to disambiguation are numerous. But these factors do not occur in all instances; rather they constitute an ad-hoc collection of observed constraints. Instead of merely enumerating observed factors that seem to play a role in certain cases, but cannot account for disambiguation in a uniform way, it would be desirable to propose a model that can solve the semantic ambiguity problem in a general and functionally plausible way. The following chapter is an attempt at giving a synthesis of the wealth of available primary data and secondary literature. My aim, however, is not to present a detailed model or theory (such as, for instance, Krifka 1998, Büring 1997 or Zhou 2008), but rather to describe the general mechanisms that can account for natural language data. The seemingly simple goal of descriptive adequacy has led me to conclude that the most appropriate account of *all…not* constructions is not a unified proposal explaining **the** NEG-Q reading and **the** NEG-V reading, but rather an approach drawing on various factors and frameworks. Thus, apart from the lexical, structural and contextual factors discussed in sections 4.1–4.4, there are two main possibilities of arriving at NEG-V and especially NEG-Q interpretations. One possibility is best treated in an information-structural framework, the other in terms of metalinguistic negation. The former will be discussed in detail in section 4.5, the latter in section 4.6, and the fuzzy border between them in section 4.7, followed by a summary in section 4.8. Section 4.9 is concerned with metalinguistic negation in German.

4.5 Information-structural factors

Information structure can be seen to be situated at the semantics-pragmatics interface and closely interacts with intonation and stress, which have been claimed to play a decisive role in disambiguation (cf. section 2.7). Therefore information structure might offer insights concerning both the question of how disambiguation is achieved, as well as why *all…not* constructions are used in the first place. The latter question will be addressed in chapter 5. For now we are only concerned with the question of which factors enable addressees to narrow the three potential readings of *all…not* constructions down to a single interpretation.

In section 2.7 I discussed research concerning intonation and how certain contours can disambiguate *all…not* constructions. Other researchers have proposed ways of accounting for this problem from an information-structural perspective, e.g. Büring (1997), Erteschik-Shir (1997), Krifka (1998). The problem with all or most of these approaches is that they rely on stress and intonation either directly or indirectly because focus structure is determined by prosodic features, mainly by focus accents. Although this kind of research provides valuable insights, it cannot resolve matters when it comes to written language and it cannot explain how disambiguation is achieved in cases that lack the intonation contour associated with the NEG-Q reading. If an information-structural approach is to shed further light on these matters, it has to be one that does not rely on intonation for the assignment of such categories as topic and focus. In Erteschik-Shir's (1997: 123) framework, for instance, intonation is derived from f-structure, rather than vice versa. This focus structure "mediates between syntax and semantics" and is already "scopally disambiguated" (Erteschik-Shir 1997: 163).

For the purposes of this study therefore, definitions of topic and focus need to be found that are independent of stress-assignment. The difficulty of devising a suitable definition for the term topic is notorious, leading some authors to a rather pessimistic assessment of the matter: "Linguists have essentially given up on a rigorous definition of topics" (Polinsky 1999: 572, cited in Gast 2010: 17). It is certainly true that many different, overlapping and fuzzy definitions for TOPIC have been proposed in the literature, such as 'the old information' or 'the first element in the sentence'. I will, however, adopt the ABOUTNESS relation as its defining property. Krifka (2007: 41) defines topic formally in the following way: "The topic constituent identifies the entity or set of entities under which the information expressed in the comment constituent should be stored in the CG

[Common Ground] content."[23] Other approaches that conceptualise topics in terms of aboutness include Lambrecht (1994) and Erteschik-Shir (2007). According to Lambecht (1994: 127 and 131), the topic relation "is a pragmatically construed sentence relation." "A referent is interpreted as the topic of a proposition if in a given situation the proposition is construed as being about this referent, i.e. as expressing information which is relevant to and which increases the addressee's knowledge of this referent." Aboutness is probably the most wide-spread criterion for topic-hood found in the literature, although there are also authors who argue against it (for instance Jacobs 1984).

The lack of a uniform definition may be even more blatant when it comes to the notion of FOCUS. Some authors maintain that focus can be read off stress assignment, others think that stress is assigned because of focus (cf. Erteschik-Shir 2007: 32f.). Often focus is seen as the NEW information of the proposition, or it is used synonymously with COMMENT. According to Erteschik-Shir (2007: 1), the focus is the constituent that answers a *wh*-question. She thinks that topic and focus are the only two primitives needed to account for all information structure phenomena (Erteschik-Shir 2007: 7). Lambrecht (1994: 58 and 207), by contrast, defines focus as that semantic element whose presence makes the proposition into an assertion, that is whereby the assertion differs from the presupposition (Lambrecht uses *presupposition* in the sense of 'common ground' or old information). Yet another definition is provided by Krifka. Although he distinguishes various types of focus, all of them have one underlying function: "Focus indicates the presence of alternatives that are relevant for the interpretation of linguistic expressions" (Krifka 2007: 18). Although these definitions seem to be quite divergent, they do not necessarily exclude one another but may be seen as different aspects of the same phenomenon. In fact, one might argue that Lambrecht's definition enables identification of the focus in cases of missing focus accents (written language), while Krifka's definition is concerned with the function of focus.

It must be stressed that, in the literature, the term FOCUS is not only used in its information-structural meaning, but also in another (though related) sense which is relevant to the present study. In the context of negation, Quirk et al. (1985: 789) note that "[w]e need to identify not only the scope, but also the FOCUS of negation." This focus of negation has to be distinguished both from intonation focus in the sense of stress and from information-structural focus as explained above, although all three are interrelated. This distinction is not always drawn clearly, which can be problematic. Quirk et al. (1985: 789),

[23] Krifka (2007) is also a good introduction to other basic information structure terms and gives a brief overview of how they have been used in the past.

for instance, claim: "A special or contrastive nuclear stress falling on a particular part of the clause indicates that the contrast of meaning implicit in the negation is located at that spot, […] that the rest of the clause can be understood in a positive sense" and that "the scope must include the focus." Quirk et al. here equate intonation focus and focus of negation, but this equation is problematic in light of some of Taglicht's examples (1984: 138, note 3), in which "[t]he focus is clearly outside the scope of negation". Moreover, from what follows in the present chapter, one is almost tempted to say that focus can force scope to include it. Taglicht (1984: 102) rightly cautions that the focus of negation "is a tricky notion, to be used with circumspection." He (1984: 99) stresses the fact that the focus of negation must be derived pragmatically when he affirms that

> [w]hat is sometimes called the focus of negation […] is not inherent in the syntactic structure of the sentence, but depends on the interpretation of particular utterances in particular contexts, this interpretation being guided, to a greater or lesser extent, by the intonation.

For German, Zifonun et al. (1997: 1551) note the following: "Apart from its general domain of influence ('scope'), the negator has a specific domain of effect ('focus'), which is indicated by position (and appropriate intonation)."[24] We can conclude that focus of negation can be seen as one type of information focus, but obviously not all information foci are associated with negation. Both can be indicated by stress, that is focus accents. However, intonation cannot be the only clue to focus-structure, otherwise we would not be able to interpret written language, which lacks prosodic features.[25]

Returning to information structure, and giving a very simplified version of uncontroversial basics, we can say that the unmarked information structure of a simple English sentence looks like (28); subscript T and F mean topic and focus, respectively.

(28) $[\text{Subject}]_T\ [\text{Predicate}]_F$

Lambrecht calls the information structure of this (at least in English) unmarked subject-predicate sentence type PREDICATE FOCUS. Such topic-comment sentences "predicate some property of an already established discourse referent" (Lambrecht 1994: 126), which is

[24] "[D]er Negator hat neben seinem generellen Geltungsbereich ('Skopus') einen spezifischen Wirkungsbereich ('Fokus'), der mit der Stellung (und einer entsprechenden Betonung) angezeigt wird."

[25] At least in most cases; occasionally stress is indicated by typographical means, as in the interesting examples (34) below and (48) in section 4.6, where stress is marked with italics and capitalization, respectively.

usually expressed by the subject constituent.[26] (Or, in the case of negative sentences, they deny a property of the topic.)[27] In the spoken language, they "are minimally characterized by presence of a focus accent on some element of the verb phrase, at least in languages like English" (Lambrecht 1994: 121). Erteschik-Shir (2007: 21) also notes that "subjects are unmarked topics across languages" (see also Reinhart 1981: 62).

Another property of topics is that the truth values of sentences are assigned with respect to topics so that

> the scopal relations in the sentence depend on topic assignment: The topic will have wider scope than other elements in the sentence because the predicate of the sentence is evaluated with respect to the topic. (Erteschik-Shir 2007: 25)

Lambrecht (1994: 153) moreover notes that "there is a sense in which the topic itself must be taken for granted, hence must be outside the scope of negation or modality in the assertion". For the issue at hand this means that when the universally quantified subject NPs of *all…not* constructions function as topics they will have wide scope with respect to the following negation, resulting in a NEG-V reading (narrow scope negation).[28] The same fact is acknowledged by Horn (1989: 512) when he says that

> [i]f a given term phrase is singled out by the speaker to represent not just the (logical) subject of the predication but the theme or psychological subject [i.e. topic] as well […] then that term phrase will effectively be outside the scope of assertion, and of course, of negation (predicate denial) as well.

However, Horn (1989: 509) is quick to stress the fact that this "apparent location of subjects outside the semantic scope of sentence negation […] is a pragmatically induced mirage." In Horn's approach the fact that topics are outside the scope of negation is not due to "logical, but [to] pragmatic, scope" (510) and is further helped by the position of

[26] Traditionally, this sentence structure is also called 'categorical', in contrast to 'thetic' sentences, which are all-focus structures lacking a topic. Categorical sentences are also referred to as double judgments because they typically consist of a (notional) subject and a predicate that says something about the subject (cf. also Jespersen's 'nexus', footnote 27). In constrast, thetic sentences are single judgments in which nothing is predicated of a particular subject. They typically contain dummy subjects (as in *It is raining*) and describe situations or events, or serve to introduce referents (as in presentational structures like *There is/are…*). For more information on the distinction between categorical and thetic sentences, see, for instance, Lambrecht (1994: 142f.) and Horn (1989: 510).

[27] Cf. also Jespersen (1966 [1917]: 42f.), who calls it nexal negation because the "negative notion […] belongs to […] the combination of two ideas (what is here called the nexus)." These two ideas are usually expressed by the subject and predicate.

[28] Similarly, Ebert and Endriss (2004b: 208) "build [their] proposal on the intuition that topicality and wide scope are closely tied together." Jacobs (1984: 55, note 34), by contrast, argues against the claim that "the scope relations between subject quantification and negation are in any way dependant on whether the subject is in the background or not." (…that "Skopusverhältnisse zwischen Subjektquantifikation und Negation irgendwie davon abhängig seien, ob das Subjekt im Hintergrund liegt oder nicht.")

sentential negation in English and other SVO languages, which "tends to surface between subject and predicate, thereby placing the subject outside the pragmatic scope of negation, as a default, in terms of left-to-right processing" (Horn 1989: 514). The observation that scope is assigned according to linear order (what was termed the principle of isomorphism by Musolino 1998; see section 2.8) thus seems to have its roots in the unmarked predicate-focus structure. In fact, this tendency seems to be so strong that it has erroneously been declared a general rule by logicians and prescriptivists (cf. sections 2.2 and 2.3).

The tendency of such unmarked predicate-focus structures to result in a NEG-V reading is in fact not the whole story. (In addition, there is the question whether this is due to semantic or pragmatic scope.) Nevertheless, many examples of sentences with NEG-V predicate-focus structure can indeed be found in the corpus data. Consider for example sentences (29)a and b:

(29) a. On lower Second Avenue we passed the Telephone Bar and Grill whose front was constructed from a series of British telephone boxes. They could be copies, but they look real enough. One red box is actually the entrance to the bar. I continue to be surprised *all* those little panes of glass have*n't* been smashed in, but a metal door comes down at night and the neighbourhood is full of tourists anyway. [A0U: 2267; NEG-V]

b. The jigsaw won't fit in the suitcase. It's back in its box now, but it's still pretty big – so I have to stick it in with the dirty washing. I hope *all* the bits do*n't* fall out of the box. [A74: 1529; NEG-V]

Apart from the aboutness-criterion defining topics, there are other features that can help identify topics, such as givenness of the referent, definiteness, or lack of stress. Mostly, these features are neither necessary nor sufficient conditions for topic-hood, but there are strong correlations (cf. for instance Lambrecht 1994, especially chapter 4). In example (29)a, the writer has introduced British telephone boxes in the context preceding the *all…not* construction. Therefore the referent of the underlined constituent *all those little panes of glass* is given, because it represents a part of the telephone boxes. GIVENNESS means that the addressee has the referent in mind (whereas OLD means that the referent has been mentioned in the conversation before; cf. Erteschik-Shir 2007: 18 for this distinction). Topics have been linked to both given and old information in the literature, but I follow the view that only givenness is an essential property of topic-hood (cf. Erteschik-Shir 2007: 19; Lambrecht (1994: 165) uses the terms 'active' and 'accessible' for a similar notion; cf. also Reinhart 1981: 73-78 on the relation between topics and old information). Apart from the givenness of *all those little panes of glass*, it is clear that this constituent is the topic

expression[29] since in the subclause something is predicated ABOUT the panes of glass. In this case, the predicate is not asserted, but denied; the important point, however, is that the subject constituent, which functions as the topic, has wide scope with respect to any other operators in the sentence, resulting in a narrow scope negation NEG-V reading.

The same can be said about example (29)b. Again, the referent of the subject *all the bits* is given because it refers to the jigsaw mentioned earlier on. The givenness of the referent is marked structurally by the definiteness of the NP. This is already an indication that this constituent may serve as the topic. And again, a negative property is predicated of this topic, namely not falling out of the box. Here, too, the topic has wide scope resulting in a NEG-V reading. Such negated predicate-focus structures almost resemble constituent negation, with the predicate being the negated constituent. This is also noted by Horn (1989: 515), when he says that "predicate denial – negation as a mode of predication, a rule for combining subject and predicate, usually (but not always) resulting in contradictory opposition – tends in practice to be functionally assimilated to **IV** (verb-phrase) negation", that is "it often mimics (without actually reducing to) constituent negation." Structurally, the distinction is fuzziest in cases without *do*-support, such as copular sentences. The two different potential structural analyses, clause or constituent negation, are shown in (30)a and b.

(30) But *all* influences are *not* unlawful. [FDD:469; NEG-Q]

a. But all influences [are not] unlawful. clause negation

b. But all influences are [not unlawful]. constituent negation

Let us return to the question of how topics can be recognised apart from the aboutness criterion. I mentioned that the givenness or accessibility of the topic referent can be an indication. When the quantifier *all* is only followed by the demonstrative *this* (without a lexical noun), this very clearly indicates the givenness of the topic referent. The demonstrative anaphorically refers to what was said before and is thus a prototypical topic expression.[30] It is therefore not surprising that both in English and German, cases with a quantified demonstrative pronoun (usually *all this*) are always interpreted as narrow scope

[29] The topic expression is the linguistic manifestation of the topic referent; the latter "is an entity which exists independently of" the former (Lambrecht 1994: 128-131).

[30] Cf. Lambrecht (1994: 187), who says that "the topic expression designates the topic referent ANAPHORICALLY or DEICTICALLY, via a pronominal expression", and Givón (1984: 899; original emphasis): "The typical nominal topic tends to be **referring** and **anaphoric-definite**".

negation; the demonstrative functions as the topic and is thus outside the scope of negation. The result are NEG-V and COLL readings, but never NEG-Q readings.

The unmarked predicate-focus structure (with the quantified expression functioning as topic and resulting narrow scope negation) is not only found in English *all…not* constructions, but also in German. As Zifonun et al. (1997: 1587) note for German: "The unmarked standard domain of *nicht* is the predicate expression".[31] Some examples are provided in (31)a-d.

(31) a. Drei Arten von Finken sind in Deutschland zu beobachten, und im Hochgebirge kommt gelegentlich eine vierte dazu. *Alle* vier sind *nicht* vom Aussterben bedroht; im Gegenteil, es gibt "Finkenjahre" in denen sie in Scharen auftreten. [C4; NEG-V]

b. Was darf ich essen? Die einen sagen, *alles*, was grün ist, darf ich *nicht* essen, die anderen sagen, ich darf alles essen, was ich in der Schwangerschaft gegessen habe. Und ganz andere wiederum sagen, daß ich fast gar nichts mehr essen darf. [deWaC; NEG-V]

c. Daraus ist zu schließen: *Alle* an der "Euthanasie" beteiligten Ärzte handelten *nicht* unter äußerem Zwang, sondern folgten freiwillig den Aufforderungen der faschistischen Führung. [deWaC; NEG-V]

d. Wir *alle* wollen *nicht* mehr die Last der Schuld und Gewalt tragen müssen. [deWaC; NEG-V]

In (31)a, *alle vier* is coreferential with the species of finches mentioned in the preceding sentence; the referent is thus given and serves as the topic, about which something new is predicated, in this case that these species are not endangered, or in other words that none of them are endangered (NEG-V). Example (31)b is also NEG-V, but its focus structure is more difficult to explain. Here, the referent of the quantifier is not given a priori; rather, it is the following restrictive relative clause that defines *alles* more clearly and renders its antecedent given so that it can then serve as topic for the following predication. This mechanism is called ANCHORING by Lambrecht (1994: 85-86 and 165f., following Prince 1981). Anchoring makes a discourse referent more accessible and identifiable to hearers/readers and thus it becomes more eligible as topic. It seems that German relative clauses generally function in this way, since the vast majority of cases where the quantified NP is followed by a relative clause are NEG-V. In English, there are virtually no cases with relative clauses (cf. section 4.2.2).

[31] "Die unmarkierte Standarddomäne von *nicht* ist der Prädikatsausdruck".

Cases of complex quantified NPs, which occur mainly with narrow scope negation (as shown in section 4.2.2), seem to function in a similar way. Here the modification defines the referent and so renders it accessible to addressees, so that it can then serve as the topic for the rest of the sentence. An example is provided in (31)c. The complex NP *alle an der Euthanasie beteiligten Ärzte* could in fact be rephrased with a restrictive relative clause as *alle Ärzte, die an der Euthanasie beteiligt waren*.

As a last example of the unmarked predicate-focus structure, (31)d illustrates cases with personal pronouns. From what has been said about unmarked focus structure and resulting narrow scope negation, it is now evident why such cases are always interpreted as NEG-V. Personal pronouns, such as *wir* in (31)d, are always identifiable and accessible to addressees, and so are frequently used as topic expressions ("the preferred topic expression is an UNACCENTED PRONOMINAL (or inflectional or zero) morpheme" Lambrecht 1994: 165; cf. also Lambrecht 1994: section 4.5 on the different roles of lexical (nominal) and pronominal topic expressions). Here, the quantifier *alle* functions more like an emphatic marker, rather than being essential to the propositional content.

In German, *all…not* constructions with unmarked predicate-focus structure account for the vast majority of all NEG-V cases (in deWaC, for instance, at least 80% of all NEG-V cases exhibit this unmarked information structure). Numerous instances of this type of NEG-V *all…not* construction with unmarked predicate-focus structure can also be found in the BNC. In fact, at least 75% of all English NEG-V cases can be assigned to this category, which is similar to the frequency in German. The majority of the remaining NEG-V cases can be explained by lexical and structural constraints forcing the NEG-V reading, such as coordination (cf. sections 4.1 and 4.2). The information-structural model thus turns out to be a fruitful approach, at least as far as the NEG-V cases are concerned.

But what about the cases with wide scope negation NEG-Q readings, which constitute the majority of the BNC data overall? Can they be accounted for with an information-structural approach as well? And can the much rarer German NEG-Q readings be explained in the same way? Things are more complicated when it comes to the NEG-Q reading. As has been mentioned several times (for example in section 2.7), many researchers have observed that *all…not* constructions are disambiguated as NEG-Q in the presence of a particular intonational pattern, usually described as the fall-rise intonation contour with

stress on the quantifier.[32] This contour in turn is interpreted as indicating uncertainty, contrast, contradiction and/or metalinguistic negation, to name just a few. It is necessary to tease apart these different interpretations. The role of metalinguistic negation will be discussed in section 4.6, since it has no direct connection to the present information-structural approach. In this context, however, the notion of contrast is relevant.[33]

We have seen that in the NEG-V cases, it is the subject that functions as the topic of the sentence. Although this case represents the unmarked focus-structure, subjects do not have to be topics in all cases. As Erteschik-Shir (2007: 114) notes: "Subjects are unmarked topics, but it is not necessarily the case that subjects must be topics." Similarly, Horn (1989: 510) affirms that "some surface subjects are assigned contrastive stress and function as the sentence focus rather than the topic. Under these conditions [… the subject …] will be understood as falling within the scope of an aux-based negation." In fact, contrast can occur both with foci and topics; in Erteschik-Shir's (2007) framework, contrastive topics are marked as both topic and focus, that is a focus is embedded in the topic. This is illustrated in (32), Erteschik-Shir's (2007: 48) example (67), with added topic and focus marking:[34]

(32) B: Tell me about your brothers John and Bill.
A: $[[\text{JOHN}]_F]_T$ [is the smart one]$_F$.

This example shows, contra Horn, that a subject with contrastive focus can still function as topic. And indeed there are examples in the BNC data, such as (33)a, where the subject NP

[32] However, as has been mentioned before, not quite all authors think that the intonation contour in question necessarily disambiguates *all…not* constructions. Erteschik-Shir (1997: 152) claims that "both wide and narrow scope readings" are available with the intonation contour. But this seems to be a minority opinion. Taglicht (1984: 138, note 9) is generally sceptical when it comes to the claim "that the intonation can be relied on to disambiguate such sentences" because "the relationship between intonation and scope relations, like the relationship between intonation and syntax, is far from simple."

[33] This is not uncontroversial. Erteschik-Shir (1997: 121), for instance, maintains that "[c]ontrast is by definition metalinguistic" since it "is the metalinguistic equivalent of a restrictive focus." I am not convinced that all cases of contrast are necessarily metalinguistic, and as metalinguistic examples without contrast can be found in the data it seems preferable – if only for expository reasons – to keep these two notions apart (cf. section 4.6 on metalinguistic negation). As will be shown later on, the boundaries between a contrastive and a metalinguistic analysis are not always clear-cut, but the distinction is still a useful one. Cf. also McCawley (1991: 189), who agrees with my position when he says that "a correlation between contrastive and metalinguistic negation exists only because contrastive negation lends itself particularly easily to metalinguistic uses."

[34] The notation introduced here would not be permitted in Lambrecht's (1994) framework, since he has a different position on contrastiveness (1994: 291). He says that "focus domains must be allowed to contain non-focal elements", but "focus elements may not be part of topical domains" (Lambrecht 1994: 216). I will here follow Erteschik-Shir's notation, but for my purposes nothing depends on the particular notation chosen.

(of which the quantifier *all* is a part) is contrastive, but the reading is still NEG-V, that is the subject is still outside the scope of negation.

(33) a. "What do the others think?"
"They think your boat belongs to Harry."
"Nothing belongs to Harry, certainly *all* that stuff in the hold does*n't*."
[H0R:738; NEG-V]
b. Nur die schlechten Dinge müssen unter allen Umständen verborgen bleiben.
Doch *alles* Gute braucht die Öffentlichkeit überhaupt *nicht* zu fürchten!"
[deWaC; NEG-V]

In example (33)a, the subject NP *all that stuff in the hold* is an attenuation of *nothing* in the previous clause. Although the subject is contrastive, it is still outside the scope of negation and the meaning is clearly 'none of the stuff in the hold belongs to Harry'. This is because the whole NP *all that stuff in the hold*, although contrasting with *nothing*, functions as the topic. This interpretation is also prompted by the redundancy of *all*, which here again functions more like an emphatic marker. Another example (for German) where the whole quantified NP is contrasted is shown in sentence (33)b (already presented as (26)c in section 4.3). Here the whole NP *alles Gute* contrasts with *die schlechten Dinge* in the previous sentence. Despite this contrast, the quantified NP also functions as the topic about which something is predicated (namely, that it need not fear publicity).

It seems then that Horn's idea (cf. quotation above) must be adjusted or at least refined. In order to force the quantifier to come in the scope of negation, even when it is part of a topic expression, the contrast has to be placed only on the quantifier, not on the whole subject NP of which it forms a part.[35] As we have seen in section 2.7, there is consensus among various researchers (despite other differences) that an essential part of the prosodic marking associated with the NEG-Q reading is strong stress on the quantifier *all* itself.[36] This already indicates that the contrast concerns only the quantifier, and not the rest of the subject constituent, as was the case in example (33)a. In such cases where the whole subject constituent is contrastive, the main stress would most likely be placed at the end of this constituent (cf. Lambrecht 1994: chapter 5.3, and Selkirk's (1995) focus

[35] While 'normal' focus "must be associated with [a] syntactic constituent[]" (Erteschik-Shir 2007: 48), it is possible for contrastive focus to occur only on a part of a constituent or even part of a word (cf. also Erteschik-Shir 2007: 49, note 48).

[36] It may be true then, as Ward and Hirschberg (1985: 770-771) affirm, that it is not the fall-rise intonation contour which is responsible for disambiguating *all…not* constructions, as is often claimed in the literature. When the fall-rise occurs in combination with these constructions, this may be due to other reasons (according to Ward and Hirschberg 1985, the purpose of the fall-rise is to indicate uncertainty).

projection rules, mentioned in Erteschik-Shir 2007: 32; Büring 2006). When reading aloud example (33)a, for instance, stress would be placed on *hold* rather than the quantifier.

By contrast, the stress associated with the NEG-Q reading, which marks contrastive focus, is placed only on the quantifier itself. Another clear indication for this claim comes from the interesting corpus example (34), in which this stress is signaled even in the written language by typographical means, in this case italics.

(34) Susan replied with her usual gentle dignity, but a soft answer does not invariably turn away wrath. In this case it seemed to increase it, and the kitchen rang with Mrs Blunt's vituperations before she finally took her leave. 'Well,' said Breeze, 'that's that! Exit char, foaming at the mouth. Let's hope *all* the inhabitants aren't quite so temperamental.'
[BMU: 1528; *all* in italics in original; NEG-Q]

In this example, it is clear from the context that there is at least **one** temperamental inhabitant in the form of Mrs Blunt. It is this implicit existential quantifier with which the universal quantifier *all* is contrasted. Although the NP *all the inhabitants* functions as the topic of the subclause, the contrastive focus on *all* enables negation to scope over the quantifier. The aboutness topic-test (*He said about TOPIC that FOCUS*; cf. Reinhart 1981: 64-65) also shows that the quantifier is not part of the topic: *He said about [the inhabitants]$_T$ that (he hopes that) [not all of them are quite so temperamental]$_F$*.

In English, as in many other languages, stress is the main mode of marking (contrastive) focus (cf. also Givón 1984: 727ff.). This is probably the reason why the NEG-Q reading has so often been associated with particular stress and intonation patterns. Focus-marking by means of stress is also a common method in German, but not the only one. Since word order is much more flexible in German than in English, another possibility of indicating contrast is fronting the constituent in question. As Givón (1984: 736) notes, "[t]he use of word-order in the coding of contrastive focus is almost – though not quite – as wide-spread as the use of stress" and "the cross-linguistic trend points out to a strong association between contrastive focus and a fronted position." In English, the constituent containing the quantifier in *all…not* constructions is always the subject, and for the subject it is normal to occur in sentence-initial position. In German, by contrast, we also find examples of universal quantifiers that are part of a fronted object constituent,[37] as is the case in sentences (35)a and b:

[37] In fact, I did find an instance of a fronted object in English as well; example (i) is from the novel *The Story of an African Farm* (first published 1883) by Olive Schreiner (1998: 67).

(i) *All* he read he did *not* fully understand; the thoughts were new to him; [...].

(35) a. Ich ging aus dem Büro. Mattle folgte mir. "Ich an deiner Stelle wäre vorsichtig. Der Kerl ist mit allen Wassern gewaschen. Und *alle* haben wir *nicht* erwischt, die mit ihm zu tun hatten." [C4; NEG-Q]

b. *Alles* freilich erzählt er *nicht* in seiner "Migros-Magazin"-Kolumne "Der Hausmann". [Sprecher 2011: 48; NEG-Q]

The fronting of the direct object *alle* in sentence (35)a is a syntactic device that clearly signals the contrast on this word. Interestingly, the relative clause *die mit ihm zu tun hatten*, the normal position of which would be directly after its antecedent, is separated from the latter by the predicate, showing even more plainly that the contrast is located only on the quantifier. Sentence (35)b, another German example of a fronted direct object, follows an enumeration of housework that the house husband in question takes care of and writes about in newspaper articles. Here the contrast is not only indicated by the non-canonical syntax, but also by the presence of the adverb *freilich*, 'admittedly', which functions almost like a modal particle and emphasises the contrast on *alles*.

Naturally, fronting as a device for marking focus occurs not only in *all…not* constructions. The examples in (36) (from my own collection) show that this is a general mechanism in German that can be used for marking contrastive focus and/or focus of negation. Fronted constituents and negation are presented in italics and heavily stressed words in bold print. Example (36)a comes from a Swiss tabloid. The canonical word order of the sentence would be *Aber er ist sich nicht ganz sicher, dass keine Gefahr besteht*. With unmarked focus structure, the subclause of this paraphrase would present new and focal information. However, the proposition that there is no danger is already elaborated in the preceding context in (36)a. The focal information here is rather that the expert is not completely sure. Therefore the focus of negation *ganz sicher* is fronted and, together with the negator at the end of the sentence, it brackets the given information. If read aloud, the main stress would fall on *ganz sícher* and also on *nícht*.

(36) a. Laut der Nationalen Alarmzentrale besteht keine Gefahr für die Gesundheit. Da es heute nicht regnen soll, droht kein Fallout. Zudem hat sich die Radioaktivität laut Greenpeace-Atomexperte Stefan Füglister auf dem Weg von Japan in die Schweiz vermutlich stark verdünnt. *Ganz sicher*, dass keine Gefahr besteht, ist er aber *nicht*. [*20Minuten*, 23-03-2011: 2]

b. ***So einfach*** kann man das auch *nicht* bestimmen. [A.N., 10-04-2011; SPOKEN]

Since Schreiner's father was a German missionary, however, I cannot rule out the possibility that she was influenced by German word order in using this construction.

c. ***Nochmal*** geb ich dir *keine* mehr. [A.N., June 2011; SPOKEN]

d. … aber ***an***fangen wir mit dem Klavier. [DRS2, 23-03-2011; SPOKEN]

Sentence (36)b is very similar to (36)a and, as it is a spoken example, shows the heavy stress on the fonted constituent. It was an answer given to my son when he said something like *When you find a bone, you can check in that book whether it's a dinosaur bone*.[38] Sentence (36)c illustrates the same mechanism again, but is notable for the fact that negation can scope over the fronted constituent even when it is lexicalised as the negative universal quantifier *keine* (due to NEGATTRAC; cf. section 4.2.2). It was clear in the particular context that the speaker was not willing to give something (jam) again, rather than repeatedly giving nothing.[39]

Example (36)d illustrates that constituents – or even just parts of words,[40] as is the case here – can also be fronted for the sake of contrast without being negated. A radio announcer produced this sentence after listing the subsequent musical programme. He stressed the verbal prefix *an-* heavily and paused before continuing with the rest of the word, so the contrast was placed only on this prefix. Interestingly, there is no word like *auf-* or *abfangen*, which would contrast in meaning to *anfangen* ('begin'). The intended contrast is therefore probably the word *aufhören* ('stop'); it seems that in the speaker's mind the prefix has taken on so much of the meaning of the whole word that it is possible for him to contrast just the two prefixes *an-* and *auf-*, even though the rest of the word is different. At any rate, the sentence in question also exemplifies fronting, in this case of the finite verb, since the unmarked word order would be *Wir fangen mit dem Klavier an*.

All the examples in (36) thus show that in German fronting seems to be quite a popular way of indicating focus, especially contrastive focus. I found no information on whether this type of fronting is particularly typical of German speech rather than writing. Zifonun et al. (1997: 1677), for instance, only note that, compared to left- or right-adjacency (where the operator is placed next to the affected elements), "Distanzstellung bzw. Aufspaltung" is a strongly marked word order. According to Zifonun et al. (1997: 1678), this kind of order is marginal in focus constructions with negation. When negation is distanced from its focus, they claim that the relation between the two is only preserved if the

[38] It is also interesting that the modal particle *auch* works only with the fronted, but not the canonical word order: *#Man kann das auch nicht so einfach bestimmen*.

[39] This phenomenon is referred to as SPLIT SCOPE in the literature; cf. Abels and Marti (2010: 466), who note that the kind of split scope illustrated in (36)c is only possible under the hat contour, and suggest that "it is available more easily for Southern speakers of standard German", which fits our example.

[40] Cf. footnote 35.

affected item as well as the negator are accented, as in *Das ist nicht immer so gewesen – Immer ist das nicht so gewesen*.[41] This example is certainly parallel to the cases presented in (36)a-c. However, it seems that cases without negation are also seen as instances of "Aufspaltungskonstruktionen" by Zifonun et al. (1997: 1678; one of their examples is *Bücher hat er viele*).

To return to our *all…not* constructions, fronting is only structurally conspicuous when the quantified NP is not the subject. Table 21 shows that of the 17 NEG-Q instances in C4, seven represent cases where the constituent containing the quantifier *alle* functions as a fronted direct object (accusative), and one where it is a fronted prepositional adverbial.[42] In deWaC (Table 22) the trend towards non-nominative *all* is even clearer; here, the quantified expression functions as direct object in 19/34 or 56% of all NEG-Q cases and as prepositional object in three cases (9%). *Mutatis mutandis*, the fact that German NEG-V and COLL readings occur mainly with the quantified expression in the nominative (in each case more than 80%) tallies well with the finding that these cases usually represent predicate-focus structure, where the subject is the unmarked topic.

Table 21. Case of the quantified NP in C4

	nominative		**accusative**		**prep. obj.**		**Total**	
	n	%	n	%	n	%	n	%
NEG-Q	9	53	7	41	1	6	17	100
NEG-V	76	84	7	7	8	9	91	100
COLL	43	90	4	8	1	2	48	100
Total	126	82	18	12	10	6	154	100

[41] A similar example with fronted focus of negation is found in the following sentence, with the fronted element in bold print: *Laut Tierarzt ist mit ihm alles in Ordnung,* ***krank*** *ist er also nicht*. [deWaC]

[42] I also found an English case of a fronted prepositional object in Thomas More's *Utopia* (1999 [1516]: 75), shown in (i):

(i) […] as our philosophers vary among themselves, so they also, while they bring new reasons of things, do disagree from all them, and yet among themselves in *all* points they do *not* accord. [NEG-Q]

Table 22. Case of the quantified NP in deWaC

	nominative		**accusative**		**prep. obj.**		**Total**	
	n	%	n	%	n	%	n	%
NEG-Q	12	35	19	56	3	9	34	100
NEG-V	170	83	21	10	12	6	203 (205)[43]	100
COLL	102	82	20	16	2	2	124	100
Total	284	79	60	17	17	5	361	100

In contrast to written German, where fronting is an important device for marking contrast (in addition to stress), this is a much less likely option in written English.[44] Since writers do not usually signal contrast via typography quite as explicitly as in example (34),[45] most readers are left to deal on their own with the task of recognizing contrast on the quantifier (due to the absence of prosodic clues in writing). How this is nevertheless achieved becomes clearer if one considers authentic examples (37)a and b:

(37) a. Sir James, who is due to retire shortly, could take over from May 1984 the task of director general of ESA, the organisation that coordinates the space activities of 11 West European nations. The advantages of this job include a lucrative salary, a nice office in Paris and unlimited opprtunities [sic] to watch the agency's Ariane rocket take off (or, as happens more often, crash to the ground) from Guyana one of the less pleasant parts of South America. But *all* may *not* go Sir James's way. [B77: 2088; NEG-Q]

b. Many of you may have noticed that *Good Housekeeping* is now on sale at the checkout in Sainsbury's, which has gone down brilliantly with shoppers, as I discovered when I visited my local London branch. I can't think why *all* supermarkets do*n't* put GH at the checkout. [ED3: 19; NEG-Q]

The text preceding the *all…not* construction in (37)a is a list of things that would "go Sir James's way", if he were to be appointed director general of ESA. In what follows the extract it becomes clear that Sir James has an opponent, and therefore the 'positive' list is contrasted with all those things that might not go Sir James's way. By juxtaposing the enumeration of things desirable for Sir James with a negation of the predicate *go Sir James's way*, which refers to all these desirable things, there is an implicit contrast between

[43] Note that two of the NEG-V cases in deWaC have dative quantified NPs, which thus function as indirect objects. The dative case was not included in Tables X and Y because the two NEG-V cases are the only ones found in the German dataset. They equal 1% of the NEG-V cases in deWaC.

[44] Biber et al. (1999: 900) note that fronting is also used in English to express contrast and for the sake of emphasis. However, "fronting of core elements", such as objects, "is relatively rare in English."

[45] Sentence (i) is a nice German example, in which the focus of negation is marked both by predicative fronting as well as by stress indicated typographically by vowel-length:
(i) Die Werbesprüche in allen Ehren – aber *soo* toll und *soo* neu ist das Ganze nun mal *nicht*. [deWaC]

the *all…not* construction and its preceding context, and this contrast is located on *all*. In (37)b, the writer gives an example of a supermarket that sells the British magazine *Good Housekeeping* at the checkout. Moreover, the predicate *(put) at the checkout* is repeated in the sentence containing the *all…not* construction. The predicate is not only given but also functions as the topic of the sentence since the latter is ABOUT putting the magazine at the checkout. The focus is therefore on the subject, and in particular on the quantifier because it contrasts with the implicit existential quantifier of one or some supermarkets (Sainsbury's), which do put GH at the checkout. In this way, readers can derive the contrastive focus on the quantifier even without the help of prosodic clues.

The analysis of written *all…not* constructions with nominative quantified NPs proceeds along similar lines in German. In (38)a, the writer describes his/her apocalyptic dream in quite some detail. It is therefore clear that s/he remembers some details. The quantifier *alle* is thus contrasted to this implicit existential quantifier and then negated. The topic (i.e. details coming to mind) is again bracketed by the focal elements, the quantifier and the negator.

(38) a. Die Sonne leuchtet rot, und der Mond ist genau daneben ..Reiter in langen Gewändern auf fliegenden Pferden, ..die Erde unter meinen Füßen zerreißt regelrecht in Fetzen, Lavaströme und Feuerstürme überall um mich ..ich habe absolut keine Angst, im Gegenteil ich geniesse dieses Schauspiel.. *Alle* Details fallen mir leider (!!!) *nicht* mehr ein... [deWaC; NEG-Q]

b. Außerdem ist alles geschlossen um diese Zeit. – "*Alles nicht*", sagte Alexandra und begann, ihren Koffer zu packen. [C4; NEG-Q]

In (38)b, the topical elements (*geschlossen sein*, 'being closed') are even elided entirely. This elipsis is possible because the topic is both given and old information, and can thus easily be recovered from the preceding context. *Alles nicht* is thus short for *Alles ist nicht geschlossen*. In English, however, such verbless *all…not* constructions are not possible unless the two elements are inverted (*not all/not everything*). It is also interesting that the *all…not* construction in (38)b occurs in 'represented speech'. My impression is that NEG-Q *all…not* constructions in German occur predominantly in speech rather than in writing. At least, my own collection of spoken NEG-Q examples and the written speech examples from the two German datasets point in this direction. A reason could be that the NEG-Q cases are easier to interpret in speech due to the possibility of marking contrastive focus on the quantifier by prosodic stress.

It is thus clear that the context of an *all…not* construction is the most important disambiguating factor – apart from other lexical or syntactic constraints, such as coordination. Although this has been suspected and maintained by other researchers before, the role of context has never previously – to my knowledge – been pinned down to information-structural principles by examining authentic examples, which are often much more complex than the constructed ones that tend to be used in the literature.

Another genuinely novel contribution of this study is the quantification of the different information-structural types. Since a completely clear-cut categorisation is difficult if not impossible in this area, I will only give rough percentages. As has been mentioned above, the unmarked predicate-focus structure accounts for at least 80% of all NEG-V cases in the German datasets and at least three quarters of all NEG-V instances in the BNC data. The analysis of the NEG-Q cases as involving contrastive focus is valid in 14/15 cases in C4 and in at least 75% of all NEG-Q cases in deWaC. This information-structural analysis can thus account for the majority of the German NEG-Q cases. In English, however, the situation is not quite so clear. 30% of the 109 non-formulaic NEG-Q instances can be analysed as representing without doubt the contrastive information structure presented above, while roughly 15% can be explained by lexical or structural constraints, such as the presence of *same* (cf. sections 4.1 and 4.2). But this leaves us with at least 50% of all the non-formulaic NEG-Q instances still unaccounted for. These NEG-Q cases can only be explained as involving metalinguistic or external negation (cf. section 4.6). Leaving aside the rather substantial number of idiomatic NEG-Q expressions for the moment, we have to conclude that two different ways of arriving at wide scope negation interpretations for *all…not* constructions need to be distinguished, at least in English: (a) the information-structural account involving contrast on the quantifier (presented above), and (b) the one involving metalinguistic negation. This is what I shall turn to in the following section.

4.6 The contentious issue of metalinguistic negation

One reason for addressing metalinguistic negation is that, in the secondary literature, it is repeatedly connected to the phenomenon of scope reversal for quantifier-negation constructions. Before turning to this connection, however, it is necessary to arrive at a clear understanding of what is meant by METALINGUISTIC NEGATION since this is another hotly debated concept. I will then demonstrate which definition is most suitable for the purpose of this study.

The term METALINGUISTIC NEGATION (MN) refers to a special kind of negation that differs from so-called 'ordinary', 'descriptive', 'truth-functional' or 'internal' negation. Various terms (depending on theoretical stance) have been used to describe this phenomenon, such as 'marked', 'external', 'second-instance', 'non-truth functional', 'choice', 'polemic' or 'contradiction' negation. Although not the first, probably the best-known publication on MN is Horn (1985, included as chapter 6 in Horn 1989), which also gives an overview of preceding literature.[46]

The most famous (or maybe infamous) example of MN is the presupposition-cancelling reading of (39), which is easier to understand with the continuation shown in brackets.

(39) The King of France is not bald (because there is no King of France).

Discussions of MN are thus often connected to issues relating to the treatment of presupposition and the question of whether natural language negation is semantically ambiguous.[47] Authors also differ in their definition of what metalinguistic negation actually is and which properties are necessary and/or sufficient conditions for this phenomenon. Properties that are often cited as characteristic of MN are the following:

a) taken descriptively, examples involve a truth-functional contradiction
b) they are followed by a rectification clause
c) potential for garden-pathing
d) association with the contradiction intonation contour
e) failure to trigger negative polarity items

[46] This paper provoked a great number of responses, among others Foolen (1991), McCawley (1991), Moeschler (1992), Chapman (1996), the dispute between Carston (1994, 1996, 1998, 1999) and Burton-Roberts (1989, 1999), Iwata (1998), Yoshimura (1998, 2000), Geurts (1998), Seuren (2000), Predelli (2003, section 4), Kasimir (2006), Rogers (2009), and Pitts (2011).

[47] These problems are complex and go beyond the scope of this study; the interested reader is therefore referred to the relevant literature (Horn 1985 and 1989 and literature cited therein; cf. also note 46).

All these are present in example (40) (Horn's (1985: 130) example (13c)):

(40) John didn't MANAGE to solve some problems – he was given the answers.

When understood as ordinary negation, the first part of (40) implies that the problems are still unsolved, but this is contradicted by the second part. The reader is garden-pathed and the intended meaning is probably not decoded until after the rectification clause *he was given the answers*. Negation is then re-interpreted as targeting the conventional implicature associated with *manage*, namely that it was difficult for John to solve the problems. Example (40) would typically be uttered with stress on *manage* and a final rise on *problems*. Finally, the presence of the positive-polarity item *some* instead of the usual negative-polarity item *any* indicates that this is a typical example of MN.[48]

Horn (1985: 122) argues that natural language negation is pragmatically (rather than semantically) ambiguous and that MN, in contrast to ordinary negation, does not reverse the truth-value of a proposition; rather, MN "signals the speaker's unwillingness to assert a given proposition in a given way." Horn thinks that the frequently used paraphrase *It is not the case that* is therefore not suitable for MN; rather the "metalinguistic operator […] can be glossed [as] 'I object to *u*', where *u* is crucially a linguistic utterance rather than an abstract proposition" (Horn 1985: 136). For Horn, MN is thus "a device for objecting to a previous utterance on any grounds whatever – including its conventional or conversational implicata, its morphology, its style or register, or its phonetic realization" (Horn 1985: 121).

Horn (1989: 496) also appears to be the first author to link MN to the scope reversal in quantifier-negation constructions, suggesting that "the fall-rise contours which tend to be associated with the NEG-Q readings" are "in fact a general characteristic of metalinguistic negation", and that "the wide-scope (NEG-Q) reading of negation in sentences with quantified subjects occurs most naturally in metalinguistic uses." However, since this intonation is not absolutely required, Horn (1989: 496) is convinced that the NEG-Q readings "must also be analyzable as realizing ordinary predicate denial."[49] Concerning the relationship of *all…not* constructions and metalinguistic negation, I agree

[48] In addition to these typical features of MN, Horn (1985: 166f) claims that the use of two different *but* conjunctions in other languages (for example *aber* and *sondern* in German) can serve as a distinction between metalinguistic and descriptive negation. However, I am not convinced that *aber* and *sondern* encode this distinction (cf. also sections 4.1 and 4.2).

[49] It is interesting that Horn (1989: 576, note 31) still detects "a metalinguistic tinge" in the NEG-Q readings. His example *All that glitters is not gold* is indeed a good candidate for a metalinguistic analysis. I will return to both the English and German version of the *all that glitters*-proverb in section 4.9.

with Horn's position that not all NEG-Q instances involve metalinguistic use (cf. previous section on information-structural factors and contrast, which, in my model, does NOT involve metalinguistic negation). Nonetheless, I will show that my conception of metalinguistic negation differs from Horn's and why some of the claims in Horn (1985) seem problematic.

Another author who explicitly links scope-inversion phenomena to metalinguistic negation is Erteschik-Shir (1997; cf. sections 2.7 and 4.5). Erteschik-Shir (1997: 121) links the L+H* contour to contrast and metalinguistic negation ("[c]ontrast is by definition meta-linguistic", and concerning *all…not* constructions she maintains that "getting both wide and narrow scope readings with metalinguistic fall-rise intonation is to be expected." As with Horn's ideas, I only agree partly with these statements. I will show that it is indeed possible to get both wide and narrow scope readings in cases of metalinguistic negation, although – for reasons that will become clear later on – metalinguistic negation usually results in a NEG-Q reading. I cannot say anything concerning the frequently invoked intonation contour, since it is not possible to verify this feature with my data. But I do not agree with the claim that contrast is necessarily metalinguistic (cf. section 4.5); rather, contrast, when it is placed exclusively on the quantifier, results only in a NEG-Q reading. I will return to Horn's and Erteschik-Shir's claims in the following discussion.

In contrast to Horn, who, as we have seen, sees natural language as pragmatically rather than semantically ambiguous, Carston (1994, 1996, 1999) considers it to be neither. Although she admits that the properties associated with MN (cf. list of properties (a)-(e) above) do typically occur in clear MN cases, she thinks that these features are neither necessary nor sufficient conditions for MN. Rather, Carston (1994: 333) maintains that the only real defining property of MN is that "the representation (or part of it) falling in the scope of the negation operator is implicitly echoic."[50] Crucially, this echoic account is meant in a rather wide sense and includes cases "where the speaker is not [only] echoing an element of linguistic form but is echoing the content of someone's utterance or indeed is attributing a (possibly unarticulated) thought or opinion to someone" (Carston 1994: 335). Thus, Carston's account also includes objections to truth-conditional content as cases of MN. These are explicitly excluded from MN by other authors, including Horn, although the latter defines MN as an objection to an utterance **on any grounds whatever**. Accordingly, Carston has been criticised for blurring the distinction between MN and descriptive negation because it may in practice be difficult to distinguish MN cases of

[50] 'Echoic' is here used more or less synonymously with 'mentioned', 'metarepresentational', or 'quotational'.

implicit echo (i.e. echo of an unarticulated thought) from descriptive negation that is uttered in the context of certain background assumptions.[51] For a detailed defence of her position the reader is referred to Carston (1994, 1996, 1998 and 1999). I do not think that the potential blurring of the descriptive-metalinguistic distinction is a serious problem since it has been shown that many linguistic categories are most adequately conceived as fuzzy or gradient, and that in practice it is often difficult to assign particular linguistic instances to clear-cut categories (cf. for instance, Aarts et al. 2004, Aarts 2007, Traugott and Trousdale 2010).

Carston's definition of MN as involving implicit echo also lends itself well to explaining why MN is often referred to as external negation. Originally, this term was used because in order to cancel the existential presupposition in (39), the negator has to be attached externally to the whole logical form, resulting in wide scope negation. For utterances involving echoic or quotational material, it is clear that negation functions externally because "the echoed material […] is, as it were, within quotation marks and so sealed off from the negation which lies outside the quote/echo" (Carston 1994: 334).[52] Such external negation is traditionally identified with the formula *It is not the case that…* (cf. Horn 1985: 122, who considers this "misleading at best"). Although Horn (1985: 128) claims that "the occurrence of the English formula *It is not true that* (or *It is not the case that*) is neither a necessary nor a sufficient condition for the emergence of a non-presuppositional understanding of a negative sentence", it does seem to be true that this explicitly external negation renders the presupposition-cancelling reading of negation more accessible.[53] The same can be said about the wide scope negation reading for sentences with universally quantified subjects. Compare the ambiguous *all…not* construction in (41)a to its externally negated paraphrase in (41)b:

(41) a. All the boys didn't leave.
b. It's not the case that all the boys left.

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[51] It is widely assumed that negative utterances "require or suggest a background context containing the corresponding positive proposition" (Carston 1996: 325). Compare also Givón's (1978: 80) well-known assertion that "a felicitous discourse context for the negative is the previous mention of the corresponding affirmative, or alternatively the belief by the speaker that the hearer has heard of the possibility of that corresponding affirmative being true".

[52] This is also the reason why MN does not trigger negative polarity items and does not occur with affixal or incorporated negation (see Horn 1989: 392; Carston 1994: 334).

[53] Or in other words, (i) and (ii) with explicitly external negation are much less likely to garden-path addressees than the corresponding examples (39) and (40).
(i) It is not the case that the king of France is bald.
(ii) It is not the case that John managed to solve some of the problems.

While (41)b is potentially still ambiguous (or maybe better, vague),[54] the NEG-Q interpretation is much easier to access than in (41)a. For *all…not* constructions like (41)a we can therefore conclude that the NEG-Q reading will be much more easily accessible when negation is interpreted externally, and this is the case when the *all…not* construction minus the negator represents echoed material. I would argue that such cases are examples of true sentence negation, whose existence in natural language has been disputed.[55] In what follows I will show that cases of true sentence negation do indeed exist when the negator *not* is added to an otherwise echoed clause.[56]

Instances of *all…not* constructions that clearly involve echoed material in the scope of negation can be found in the corpus data. In both the examples (42)a and b, the whole clause forming the *all…not* construction is echoed verbatim from earlier discourse (except for the negation operator of course; first use and echo are underlined). The assumption in (42)a is that *all calories are the same*, and this whole proposition is externally negated. In this case the assumption is stated explicitly and the echo is therefore clear. Later on I will also present instances where the assumption, or more generally the proposition the writer wants to negate, is only implicit, but the mechanism of echoic use remains the same. In all such cases, negation, which can only be interpreted externally, results in a NEG-Q reading. In example (42)a this reading is, in addition, reinforced by the presence of the lexical item *same* (cf. section 4.1).

(42) a. Until recently it had always been assumed that all calories are the same, regardless of where they came from. In other words a fat calorie was exactly the same as a carbohydrate or a protein calorie. And if we overate on any one of them then any surplus energy would end up by making us fat. However, recent research has confirmed that *all* calories are *not* the same. [BPG:561; NEG-Q]

b. Mr. Ashworth submitted that if all else failed, Community law would come to his rescue. As *all* else has *not* failed, I propose to deal with this aspect of the matter shortly. [FCR:494; NEG-Q/UNDERSPEC][57]

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[54] I will come back to the distinction between ambiguity, vagueness and underspecification later in this chapter.

[55] For instance: "it is not clear that 'not' ever functions as an operator on zero-place predicates, that it is ever a sentence-forming operator on sentences" (Barnes 1995: 163); "the basis of this premise – the Stoic doctrine of *apophatikon*, the iterating external truth-functional negation connective – is a misrepresentation of natural language" (Horn 1989: 467); "[w]hile in logic one most often considers negation to be a sentential operation, in the syntax of natural languages it is most often a predicate-phrase operator, excluding the subject from its scope" (Givón 1978: 89).

[56] In this respect, my position corresponds to Horn's, in whose approach "[a]pparent residual instances of external negation are in fact manifestations of metalinguistic negation" (Horn 1989: 472).

[57] Why I have marked this example not just as NEG-Q, but also as UNDERSPEC (underspecified) will be explained shortly.

Example (42)b is very similar. Here somebody had previously raised the possibility that all else would fail, but the writer then asserts that *all else has not failed*, or, in other words, that 'it was not the case that all else failed'. The latter paraphrase indicates more clearly that negation is external, but the addition of another clause renders it stylistically clumsier than the original version.

Although examples of *It is not the case that* can be found in the corpus data (75 instances in the BNC, i.e. only 0.76 pmw),[58] the preferred (if less clear way) of negating a proposition/utterance externally in natural language seems to be by way of using *not* in its unmarked position. In English, the unmarked position for *not* is after the finite verb, resulting in what looks like nexal *not*, although in these cases of sentential or external negation *not* does not create a nexus between subject and predicate at all. It could therefore be argued that MN cases involve a clash between semantics (external negation) and syntax (use of what looks like unmarked nexal *not*). As has already been discussed in section 4.5, nexal *not* creates a nexus or connection between subject and predicate, or in other words between topic and comment. So in the unmarked sentence structure, a negative predicate is asserted of a subject (*X (is not) p* or *X is not-p*). This is not the case in MN. Here the entire assertion that a predicate applies to a subject is (externally) negated (*not (X is p)*). The same is observed by Horn (1989: 577, note 33, citing Ladusaw 1979): "'[this] points to the necessity of distinguishing assertion of a negation from negation of an assertion' – or, in my terms, descriptive from metalinguistic negation". The distinction between the two is particularly straightforward when the negated material is echoed verbatim, as was the case in (42)a and b.

Still clearly echoic but rendered not quite verbatim is the material in the scope of negation in example (43). The statement *the names of the women must also be registered* implies that all the women must be registered. The conditional clause containing the *all…not* construction specifies what happens if this requirement is not met.

[58] Of course there are other possibilities for explicitly external negation, e.g. the use of *Not that*, but this seems to be used rather for denying something the speaker fears to have implied, as in example (i) from Othello (III, iv, 191-192). Cassio instructs Bianca to leave him because he does not want Othello to see him with her. When Bianca's suspicions are raised, he tries to avert them:

(i) BIANCA: Why, I pray you?
CASSIO: Not that I love you not.

A similar example from the BNC is presented in (ii):

(ii) For the potentially more dynamic beginner the choice of board can be expanded into the realms of the long "funboard". Not that *all* boards are*n't* fun […]. [G2S:733; NEG-Q]

(43) Each brothel has to obtain a special licence from the police and the names of the women must also be registered. The women must undergo monthly medical check-ups. If *all* the women are *not* registered, the police may make a raid on the brothel, taking the unregistered women to prison until the owner of the brothel pays a fine. [EVS: 204; NEG-Q/UNDERSPEC]

To make the semantically external status of negation syntactically clear, the example could be paraphrased as *All the women must be registered; if not, the police may make a raid*. Again, the echoic nature of the material in the *if*-clause indicates that negation has to be interpreted externally.

Another clue to external or metalinguistic negation, apart from echoic use, is the presence of positive polarity items (PPI; for example *some* in sentence (40)). This is one of the features of MN that is mentioned frequently (property (e) in the list above). And indeed the BNC yields some examples of *all…not* constructions containing *already*, which is classified as a PPI by Quirk et al. (1985: 782 and also 580).

(44) a. By the time a report reached the authority something was seriously wrong if *all* its recommendations were *not* **already** in operation. [FAM:1206; NEG-Q]

b. I suspect that the right hon. Gentleman said something a little earlier that was factually inaccurate. He has implied that *all* those who are involved in taking a vehicle are *not* **already** committing an offence, but they are. Everyone who is involved in taking a vehicle is implicitly committing an offence. The right hon. Gentleman has implied that those who travel in such a vehicle are not already committing an offence, but they are. [HHX:7007; NEG-Q/UNDERSPEC]

Sentence (44)a is another example of an *if*-clause with external negation. Although the material in the *if*-clause is not explicitly echoed (as was the case in (43)), it implicitly echoes the author's expectation that all the recommendations **would** already be in operation. Moreover, the presence of the PPI *already* is a clear indication that negation functions externally, otherwise the sentence would be rendered as *all its recommendations were not in operation **yet***. The same can be said about example (44)b, an interesting extract about car theft concerned with the question as to who is liable when an accident happens with a stolen car (taken from Hansard). Again, we do not have an explicit echo because what the first MP said was *Of course, not all cases of vehicle taking are so serious*. Since this can be interpreted as a downplaying of the offence, the second speaker takes it as a contradiction of his own opinion (and the legal facts) that all those who are involved in taking a vehicle **are** already committing an offence. It could in fact be argued that this is a

case of double echo, because the speaker does not merely echo what somebody else said, or what he thinks somebody else inferred; rather, he reports or rephrases the first hon. Gentleman's implied denial of the speaker's own opinion that all those who are taking a vehicle are already committing an offence. Interestingly, almost exactly the same sentence is uttered again later on without the quantifier *all* (*those who travel in such a vehicle are not already committing an offence*). This is a rhetorical device juxtaposing the predicates *take* and *travel*. So while the law states that the taking of a vehicle is an offence, it is debated whether this applies also to merely travelling in such a car.[59]

There are also other interesting cases of negative sentences with PPIs. In section 2.3, I mentioned the fact that quantifier-negative sentences are not ambiguous when the universal quantifier is replaced with an existential quantifier like *some*; in these cases, only the NEG-V reading is available. However, Horn (1989: 494) gives some authentic examples of *some…not* constructions with wide scope negation readings (cf. (12)a-c in section 2.3, repeated here for convenience as (45) with existential quantifier and negator in italics).

(45) a. A sociopath wouldn't get through the first ten minutes of my films. They are too slow. *Someone* is*n't* killed in the credits. (from a newspaper interview with Brian de Palma)

b. She swung round, she took two strides to him, waiting for someone to stop her, but *someone* did*n't*. (from John Le Carré's *The Little Drummer Girl*)

c. Neither Inspector Walker nor the book's readers can be entirely certain that *an* innocent man has *not* gone to the gallows. (from a book review in the *New York Times*)

All these examples involve unfulfilled expectations. According to Horn (1989: 494), "the appearance of the *some/a…not* construction within a context where the corresponding positive expectation has been explicitly established licenses a NEG-Q reading". Horn mentions that this phenomenon is related to the "word by word, emphatic denial" (Horn 1989: 497, quoted from Baker 1970b: 169), where *some…not* also occurs with meta-linguistic negation. Horn's recognition that these cases are related to the 'word by word, emphatic denial' already points to the fact that examples (12)a-c are echoic and therefore metalinguistic. In theses cases, it is the (implicit) expectation in the CG context which is echoed and denied. Metalinguistic negation, since it functions externally, can thus lead to wide scope negation even in cases with existential quantifiers, where this is usually not possible. In these cases, negation "fails to interact with polarity items in the usual way"

[59] I am grateful to David Denison for discussing this example with me.

(Horn 1989: 496). The PPI *some*, despite being in the scope of negation, is not changed to the negative polarity item (NPI) *any*, because it is part of the echoed material that is "sealed off from the negation which lies outside the quote/echo" (Carston 1994: 334).

Quirk et al. (1985: 778, note [a], 786) say that the presence of PPIs in negative sentences is unacceptable, except in denial sentences, that is "denials of positive statements previously stated or implied" (778, note [a]). It seems then that what Quirk et al. call 'denial sentence' refers to the same phenomenon as my external or metalinguistic negation (and is similar to Horn's word by word, emphatic denial). And indeed MN seems to lend itself well to the function of denial, as can be seen in example (46).

(46) A: It seems to me that the discussion right now is that we are all seeing all men hate all women!
B: Mm.
A: And that is not true! Some men hate some women. Yeah, I have worked all my life in various jobs and I've never yet met a man who hated me nor have I hated any man, and I think there must be many women here who think the same thing. So, *all* men do *not* hate all women!
[FL7:210; SPOKEN; NEG-Q]

Here speaker A complains about the apparently wide-spread opinion that all men hate all women, and then goes on to deny this opinion by repeating it verbatim with the addition of *not* in the predicate.

The fact that NEG-Q *all…not* constructions are often used as denials is also confirmed by the presence of explicitly contrastive conjunctions (or adverbs) such as *but* or *however*. Biber et al. (1999: 901), for instance, note that contrast can be "made explicit […] through the conjunction *but*". Such overt markers of contrast occur fairly often with NEG-Q readings (48/255 or 19% of all NEG-Q cases), but hardly ever with NEG-V readings (2/80 or 2.5% of NEG-V cases).[60] Two examples are provided in (47)a and b.

(47) a. After so long a period of remorseless manufacturing decline in the UK, to hope for a reversal might seem wishful thinking. **But** *all* is *not* lost.
[CBU:1022; NEG-Q]

b. More than 90% of patients with duodenal ulcer are carriers of H pylori. *All* carriers of the bacterium, **however**, do *not* suffer from duodenal ulcer.
[HU3:1317; NEG-Q]

[60] A table showing the distribution of contrastive conjunctions and adverbs with NEG-Q and NEG-V readings is provided in Tottie and Neukom-Hermann (2010: 168).

In (47)a, the reader might get the impression that after the manufacturing decline everything is lost and there is no hope left. The presence of the contrastive conjunction *but* explicitly indicates the denial of the reader's potential assumption that all is lost. The negation of this assumption is already foreshadowed by the use of *might* in the previous sentence (hope for a reversal might seem wishful thinking, but in fact it is not). Similarly, from the context of (47)b readers might infer that the bacterium H pylori is the cause of duodenal ulcer and therefore all carriers of the bacterium would suffer from it. This universal statement is negated. Again, these NEG-Q cases are echoic denials of previously expressed or inferred propositions. Thus the assumption *all carriers of the bacterium suffer from duodenal ulcer* is echoically negated as *all carriers of the bacterium do* not *suffer from duodenal ulcer*. Therefore these NEG-Q instances can be argued to involve MN. The external interpretation of such examples also explains Musolino and Lidz's (2006) finding that children's acceptance of the NEG-Q reading is increased drastically when the *all…not* construction is preceded by an affirmative statement (as in *Every horse jumped over the log but every horse didn't jump over the fence*; cf. section 2.8). This kind of juxtaposition of two propositions strongly favours an external interpretation of negation (**p** but **~q**).

Another indication that negation is to be interpreted externally is provided when the negator itself (or the auxiliary verb that hosts the clitic *n't*) is stressed. Quirk et al. (1985: 790, note [a]) observe that "[i]n denial sentences the clause negator may have the focus, since the rest of the clause has already been asserted or implied." In such cases, it is the negator *not* itself that receives the focus accent. And indeed there is a very interesting example in the BNC, given here as (48), where this stress on the negator is typographically marked by capitalization of *not*.

(48) **Savings and loans**
All lenders are *NOT* the same! The Which Mortgage survey of the true costs of a mortgage shows that there are real savings to be made simply by choosing your lender carefully. [G2K:39; NEG-Q]

Here the emphasis is so clearly on the polarity of the statement that negation can only be interpreted externally.[61] What is surprising is that the material in the scope of negation is not even implicitly echoed because this is in fact the first sentence of the article, directly

[61] I found only one author who explicitly denies the possibility, not to mention the necessity, of the NEG-Q reading when the negator is stressed. Hogg (1977: 130) is certain – I think mistakenly – "that if not is heavily stressed a neg-V reading is obtained." Other authors, such as Jaspers (2005: 221), agree with my position that "emphasis on *not*" can result in external negation.

following the title. In this case the typographically marked stress on the negator forces the reader to interpret negation externally and as a consequence also to construe the rest of the clause as echoic. This results in the accommodation of the opinion that all lenders are the same, or maybe rather of the implication that the readers held this opinion previous to reading the article.[62] If the writer had wanted to spell out this implication, s/he could have said *You probably think that all lenders are the same, but this is not true*. In information-structural terms, it could be said that the echoed material (or the material that is accommodated as echoed) functions as the topic and the information focus is restricted to *not*.

Thus both accent placement and intonation of such MN cases clearly differ from the fall-rise intonation contour with stress on the quantifier which is usually associated with the NEG-Q reading, and which I have shown in the previous section to be typical of a contrastive interpretation. To do justice to the observed facts we therefore have to distinguish cases of contrast from metalinguistic cases. The contrastive cases are characterised by stress on the quantifier *all*, which is the focus of negation, and can only be interpreted as NEG-Q. In the metalinguistic cases, by contrast, stress can be placed on the negator itself (emphasising the denial of the echoed material) and although the usual interpretation is also NEG-Q, a NEG-V reading is not ruled out a priori. This also explains Horn's observation (1989: 496) that "no special intonation is required to bring out the wide-scope reading of negation in, for example, *All is not lost*." This special intonation is not required when negation is external, and this is precisely the case when the material in the scope of negation is echoic. I have presented a number of examples where this material was echoed verbatim so that the echo is explicit, while in example (48) the echo is only implicit (or even only implicated).

There are further MN cases in the data where the echo is only implicit, that is what is echoed is an unarticulated thought, opinion or expectation, as in example (49).

(49) Derek Fletcher was arrested by police in the USA three months ago and has been kept in custody in Corpus Christi. Magistrates in Wrexham where Fletcher launched cut-price car import firm Intercar (UK) five years ago signed a warrant for his extradition on deception charges. But two detectives who flew to Texas last month had to return without their prisoner after it was discovered that *all* the necessary paperwork in the USA had *not* been completed. [K97:8608; NEG-Q/UNDERSPEC]

[62] Horn (1989: 577, note 31) rightly notes that "it is as if each *all…not* sequence were prefaced by 'Contrary to what you {said/assumed}'. No such expectation is evoked in the negated universal (*Not all…*) counterparts of these sentences." One can also turn this statement around and say that *all…not* constructions are interpreted as NEG-Q precisely when there is such an expectation to the contrary in the CG. Or in other words, that writers can use what looks like nexal *not* externally only when such an expectation is already in the CG.

The expectation or condition for extradition is that all the necessary paperwork is completed. This condition is not stated explicitly in (49), but it can be assumed to be part of the addressee's world knowledge. The writer uses external negation to make the point that this condition was not met and that therefore the prisoner could not be taken away. The usual paraphrase for the NEG-Q reading would be *it was discovered that not all the necessary paperwork in the USA had been completed*. However, we do not actually know whether not all or even none of the paperwork had been completed. In fact, even the writer may not know this, so s/he may even exploit the *all…not* construction on purpose in order to remain vague about exactly what portion of the paperwork had not been completed. It would therefore be more accurate to characterise (49) as a case of semantic UNDER-SPECIFICATION.

It seems that the term "underspecification" was first used in phonology (Inkelas 2006: 224-227), but in recent years it has come to be used in semantics as well, especially by computational linguists. Ambiguities are a major problem for computational linguists. There are various ways of dealing with them: one can retain all ambiguities and list all possible readings in a disjunctive set, but this can be very inefficient and psycholinguistically implausible. Or one can resolve the ambiguities as soon as possible, but this can be tricky (modelling of world-knowledge) and can also lead to mistakes. As a third solution, the idea emerged to add an additional layer to the linguistic representation, i.e. a meta-level with underspecified structures (see Egg et al. 2001). In this sense, the term underspecification is used as a technical solution for problems of NLP (natural language processing) systems.

However, underspecification also makes sense in a psycholinguistic context. As Egg et al. (2001: 412) note, "often early resolution [of ambiguities] is not the preferred strategy of human understanding." To refrain from disambiguating everything all of the time is not necessarily a disadvantage because is is possible to "access and use semantic information conveyed by [a particular utterance] without committing oneself to any of its readings" (Egg et al. 2001: 412).[63] Underspecification is thus also related to vagueness[64] in a

[63] Noveck et al. (2007: 86) argue for the opposite view when they claim that "[i]n the case of *Every…not* sentences, it is in the addressee's interest to choose one reading or otherwise the sentence remains ambiguous." In fact, however, it is not necessarily against the addressee's interest to leave a sentence underspecified, let alone in the speaker's/writer's. As Zhou (2008: 40) notes, "potentially ambiguous sentences are not always fully disambiguated in context" because "it is simply not necessary to disambiguate beyond a certain point."

[64] Vagueness in linguistics should be distinguished from vagueness in philosophy. The latter refers to a particular type of predicates that "admit borderline cases", have fuzzy boundaries and "are susceptible to sorites paradoxes" (Keefe 2004). The most popular example of the sorites paradox is the question of

linguistic sense. Underspecification/underspecificity and vagueness can be used synonymously (see for instance Keefe 2004), but I think it is useful to distinguish them. Vagueness is then "a matter of being less than adequately informative for the purposes in hand" (Keefe 2004: 47), such as for example *Peter loves somebody* when the interlocutor wants to know whom Peter loves exactly. Underspecification, on the other hand, is a matter of being less informative than one could be, but not less than adequately so for the purposes in hand. While vagueness tends to evoke negative associations, underspecification is more neutral or even positive. Perhaps one could also define underspecification as a kind of imprecision that is irrelevant to the purposes of the utterance and therefore does not have to be resolved or be made more specific. In cases of ambiguity, by contrast, the reader needs to choose one of the potential interpretations (because this makes a difference in terms of text comprehension) but does not have enough information to do so.

Returning to example (49), we can classify it as a case of underspecification because we cannot decide on either a NEG-Q or a NEG-V reading on the basis of the information supplied. But this is of no consequence; the point of the statement is simply that the condition for extradition was not met, and the reader does not need to know to what degree this condition was not fulfilled (indeed, the writer may not have known this). In such cases of underspecification, readers do not need to disambiguate; in fact they probably do not even realise that there is a potential for ambiguity because the information that is left indeterminate is of no consequence for the understanding of the (rest of the) text. A suitable paraphrase of such underspecified *all…not* constructions would be *not all or possibly even no* N. This is because in its external interpretation, made explicit by the *It is not the case that…* paraphrase, negation targets the whole sentence/ proposition, so that the potential focus of negation (the quantifier or the predicate) cannot be determined.

Underspecified *all…not* constructions that are potentially NEG-Q or NEG-V due to metalinguistic or external negation are quite frequent in the BNC. Under certain circumstances, a metalinguistic *all…not* construction can also be interpreted as NEG-V rather than as underspecified. This is mostly the case when the sentence in question exhibits other features that tend to force the NEG-V reading. In example (50), for instance, *all* is a more or less redundant emphatic marker rather than a real quantifier, which favours a NEG-V (or in other cases COLL) reading. Moreover, the anaphor *it* in the next clause, referring back to *all this money*, strongly promotes a NEG-V interpretation.

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when a heap of sand from which individual grains are being removed stops being a heap. A typical example of a vague predicate is 'is tall'.

(50) In the same period, royal rents were increased as the crown converted its grants of land to feuferme, hereditary tenure for which its tenants paid heavily. And because *all* this money was *not* needed for war, it was available, and extensively used, to show its subjects that their monarchy lived in style and elegance. These kings were, for instance, fully alive to the prestigious military developments of the day, and determined to add to their prestige at home by having them. [AE4:336; NEG-V]

Such examples, however, are very rare; the vast majority of all MN cases were analysed as NEG-Q/UNDERSPEC and can be glossed with *not all or possibly even no* N. A further example of this rather frequent underspecified use is shown in (51):

(51) The objective of fund accounting is to reflect this lack of fungibility in two ways: By ensuring that all debits and credits are maintained separately for funds which are not fungible. By producing a separate operating statement and balance sheet for each non-fungible fund. In practice, many local authorities do not fully achieve these, for a variety of reasons. For example many do not publish separate fund balance sheets, only separate operating statements. We have also noted that *all* debits and credits are *not* maintained separately because authorities tend to keep only one cash book. [GVU:1199; NEG-Q/UNDERSPEC]

Example (51) is another case of explicit echo (the material that is echoed in the *all…not* construction is underlined). This echo clearly points to a metalinguistic or external interpretation of negation. The reader cannot be sure whether (a) not all debits and credits are maintained separately or (b) even none of them – but the underspecification is not a problem because the writer's intended meaning is simply that the advice (to maintain debits and credits separately) is not followed. Although in this case a NEG-V interpretation is not unlikely (if authorities keep only one cash book they probably cannot maintain any debits and credits separately), it was analysed as NEG-Q in the database. This is because the NEG-Q reading is weaker than the NEG-V reading, so addressees (as well as analysts) are on safer ground if they abide by the former.[65]

From a pragmatic point of view, this is in accordance with Gricean maxims, which among other things instruct speakers not to "say that for which [they] lack adequate evidence" (Grice 1989: 27) and to "[m]ake [their] contribution as informative as is required (for the current purposes of the exchange)", but not "more informative than is required"

[65] This idea seems to be related to Musolino's principle of parsimony mentioned in section 2.5, which "predicts that the interpretation which is true in the broader set of circumstances – the superset interpretation – namely the interpretation where negation takes scope over *Every horse*, should be preferred by adults in the absence of decisive context" (Musolino 1998: 174).

(Grice 1989: 26). The same matter can be explained from a relevance-theoretic perspective, where communicators are directed to produce an "ostensive stimulus [which] is the most relevant one compatible with [their] abilities and preferences" (Sperber and Wilson 1995: 270). This explains not only why speakers and writers can and will produce underspecified utterances, but also why the latter present no problem to addressees. In example (51), the information required for the purposes of that exchange is simply that the suggestion to maintain debits and credits separately is not followed. Whether this is the case for all debits and credits or just some of them may be known to the writer, but is not the concern of the text. As a consequence, the reader does not have to decide this indeterminate question either, because this indeterminacy presents no difficulty for the further understanding of the text. A similar case of underspecification, but without explicit echo, is shown in example (52)a. Here the interviewee thinks that all British people should feel deeply hurt; if this is not the case, that is if not everbody or even nobody feels deeply hurt, he concludes that there is something wrong with them.

(52) a. The Satanic Verses referred to Mrs Thatcher as "Maggie the bitch". Worse still, the central character dreams of "making tender love to the Monarch … she was the body of Britain, the avatar of the State". If *all* British people did *not* feel deeply hurt by this "there's something wrong with you…" [A1J:452; NEG-Q/UNDERSPEC]

b. The interesting people you wanted to be with – their minds were unusual, you saw things freshly with them and *all* was *not* deadness and repetition. [C8E:905; NEG-Q/UNDERSPEC]

The last example of the *not all or even none* reading, presented in (52)b, comes from the novel *The Buddha of Suburbia* by Hanif Kureishi (parts of which are included in the BNC). In this book the main character usually feels that everything is "deadness and repetition", but when he is with 'the interesting people' this is not the case – then not all or even nothing is deadness and repetition. (It is possible or even likely that he thinks that nothing is deadness and repetition with the interesting people, but it is still safer, and to all intents and purposes sufficient, to choose the weaker NEG-Q interpretation. The point is that the interesting people save him from his usual boredom at least to a certain degree.)[66]

[66] In Tottie and Neukom-Hermann (2010: 160), we analysed this example as NEG-V because the paraphrase *nothing was deadness and repetition* seemed more approriate than *not all was deadness and repetition*. However, the external paraphrase *it was not the case that all was deadness and repetition* is the best choice. This shows that the *not all* and the external paraphrase are not always interchangeable (cf. also section 4.7).

I have shown that metalinguistic *all…not* constructions are often underspecified. The best paraphrase for these underspecified cases is *not all or even none*. Despite their indeterminate status they are best categorised as NEG-Q because this is the weaker of the two readings and therefore the safer choice for addressees (and analysts) – and the one that is sufficient for all intents and purposes of the text. In sections 4.5 and 4.6 I have argued that these metalinguistic NEG-Q cases should be distinguished from those NEG-Q instances where the scope inversion is due to contrastive focus on the quantifier *all*. Next, in section 4.7, I will turn to the question of a possible overlap between these theoretically distinct alternatives of arriving at NEG-Q interpretations.

4.7 Overlap: Contrast and/or metalinguistic negation?

In section 4.5, I showed that contrastive focus on the quantifier leads to NEG-Q interpretations, while section 4.6 was concerned with a different way of arriving at NEG-Q readings, involving metalinguistic negation. The difference between these two routes of interpretation has also been recognised by Zhou (2008: 10f.), who notes that the *not every…* and the *it's not the case that every…* paraphrases are not always interchangeable. The latter paraphrase is more suitable for the cases that involve metalinguistic negation. As these MN cases result in underspecification, and are usually NEG-Q, they can potentially also be interpreted as NEG-V (although this is rare). The reason for this is that in the metalinguistic cases negation functions externally and can therefore target any element of the sentence as its focus. The fact that metalinguistic negation can result in either NEG-Q or NEG-V readings has also been noticed by Erteschik-Shir (1997).

But why does Erteschik-Shir (among others) collapse metalinguistic negation with contrast, which, according to my analysis, can only result in a NEG-Q reading, and via a different interpretational route than the MN cases? The reason is probably that MN and contrast go well together. This is also noted by McCawley (1991: 204), when he says that "the only relation between contrastive negation and metalinguistic use of negation is the naturalness of employing the former constructions when one has the latter goal." Moreover, I have shown that a typical function of the metalinguistic NEG-Q cases is (emphatic) denial and denials imply a contrast to what is being denied. This may be another reason why some researchers collapse the two categories. And indeed some *all…not* constructions can be found in the data for which it is difficult to decide whether they are metalinguistic or contrastive. Thus it seems that there may be an area of overlap or a fuzzy border between cases of contrast and metalinguistic cases. As in other cases of

fuzziness, however, this should not be taken as evidence against the existence of different categories. Such fuzzy examples that can be argued to belong to both categories are presented in (53)a and b:

(53) a. "After all, Clara, you've had a hard year. With your father. You deserve a change." And Clara sat there and endured it. Because the truth was that this evidence of care and tenderness was harder to bear than any neglect, for it threw into question the whole basis of their lives together. Perhaps there was hope, perhaps *all* was *not* harsh antipathy, perhaps a better daughter might have found a way to soften such a mother. [EFP:457; NEG-Q]

b. A "landmine" destroyed one vehicle, a patrol was ambushed as they spoke to some locals, and a foreign parachute and map were discovered on a beach after a tip-off. *All* did *not* go against the Key Company, however; prisoners were taken at some of the incidents, some carrying vital information. [A77:1864; NEG-Q]

In example (53)a, Clara's experience with her mother leads her to expect that all is harsh antipathy in their relationship, but the unusual signs of tenderness that her mother shows in this scene make her doubt her own expectations. Interpreted in this way, we have a case of metalinguistic negation. On the other hand, the *all…not* construction in question could be an example of contrast. Since a major part of Clara's emotional relationship with her mother is one of harsh antipathy, *all was not harsh antipathy* can also be read with contrastive stress on *all*, juxtaposing *a large part* (which is implied) with *all*. Example (53)b is similar. Here, some things go against the Key Company, so the universal quantifier in the *all…not* construction is contrasted with this implicit existential quantifier. However, this contrastive analysis is not the only possibility. It could be argued that because of the enumeration of things that went against the Key Company the writer anticipates the reader's inference that all went against the Key Company, and so he externally negates this inference.

The next example (54), which can be analysed in much the same way, is an extract from a novel that contains the quotation of a famous *all…not* construction from *Paradise Lost*. Either the things that are lost are contrasted with *all*, or the example involves the external negation of the inference that because the field is lost, all is lost.

(54) He read the words underlined. What though the field be lost? *All* is *not* lost; the unconquerable will, And study of revenge, immortal hate, And courage never to submit or yield. Father Poole closed the book. [B1X:1201; NEG-Q]

This example is particularly interesting because *all is not lost* is one of the idiomatic expressions that are always interpreted as NEG-Q. Study of diachronic corpora might reveal how such idiomatic *all…not* expressions emerged and developed. I expect that these idioms were first used as external negations of similarly idiomatic non-negative formulae (for instance *all is well*).[67] However, I would argue that today the NEG-Q meaning is part of the non-compositional nature of these expressions and so does not have to be derived via an interpretation as metalinguistic and/or possibly contrastive, but is accessed directly. It may not even be unlikely that, due to the frequent or salient use of idiomatic NEG-Q constructions (cf. note 71), the construction type *all V not* tends to be associated with the wide scope negation reading in English.[68] This hypothesis could also explain why more subjects interpret out-of-context *all…not* constructions as NEG-Q rather than NEG-V in the questionnaire-based studies and others discussed in chapter 2.

The final NEG-Q example illustrating fuzziness between a contrastive and meta-linguistic interpretation is (55)a. This example is particularly interesting because it seems to be a case of litotes (***not un****lawful*). Litotes in *all…not* constructions usually results in a NEG-V reading because it functions like predicate term negation, as for instance in (55)b.

(55) a. Mr. Munby, for the Official Solicitor, representing Miss T., drew our attention to the line of probate cases which had considered undue influence. Sir J. P. Wilde summed up to the jury in Hall v. Hall (1868) L.R. 1 P. & D. 481, 482: "To make a good will a man must be a free agent. But *all* influences are *not* unlawful. [FDD:469; NEG-Q]

b. But it's important that *all* this good work is *not* undone by unhygienic practices after the food is bought – when it is taken home, stored and cooked. [BN7:1807; NEG-V]

Example (55)a, however, is metalinguistic and/or contrastive and therefore NEG-Q. Having mentioned undue influence and the fact that a man (generic) must be a free agent to make a good will, one may easily infer that all influences are unlawful. This inference is externally denied. Alternatively, the context states that some or most influences are "undue", so the implicit quantifiers *some or most* are contrasted with *all*. Both ways of analysing (55)a result in a NEG-Q reading. This also goes to show, as linguists have often noted, that two

[67] A nice example of the clearly echoic nature of *All is not lost* can be heard and seen in the song and music video of that name by OK Go and Pilobolus, in which this expression alternates with *All is lost*. (I would like to thank Nicole Studer-Joho for drawing my attention to this song.)

[68] For future research, it might be worth pursuing this idea in a Construction-Grammar framework.

negations do not just cancel each other as in logic; thus double negation is not (usually) the same as no negation at all.

4.8 Concluding remarks on information structure and metalinguistic negation

The major conclusion resulting from sections 4.5 and 4.6 is the importance of distinguishing two types of NEG-Q *all…not* constructions that have not been kept apart so far. The contrastive cases are characterised by contrastive focus on the quantifier *all*, which in speech is realised as contrastive stress on *all*. This contrastive focus indicates that there is an alternative for *all* in the CG context. Because of the contrastive focus on *all*, the force of negation is focused on this item and the result is wide scope negation, in other words the NEG-Q reading. This type accounts for roughly 35% of the free NEG-Q instances in the BNC.

The majority of the free NEG-Q examples (roughly 60%) are of a different type that has to be clearly distinguished from contrast. In this frequent type, the whole clause, apart from the negator itself, is echoed, either explicitly (in a more or less verbatim repetition of earlier material) or implicitly (the echo is an unarticulated thought, opinion, expectation or implicature, either of the writer him/herself or attributed by the writer to the addressee). The negated material is echoed and therefore this type of negation is also referred to as metalinguistic negation. Semantically, the result is external negation, or in other words contradictory sentence negation that can be paraphrased with *It is not the case that…* (cf. Jackendoff 1972: 321 and Horn 1989: 469-70).[69] Although these metalinguistic or external negation cases can potentially be interpreted as NEG-V (*no/none*), the vast majority are underspecified (*not all or possibly even none*) or NEG-Q (*not all*). In case of underspecification, the addressee either does not resolve the indeterminacy in favour of one of the readings (because this is of no consequence for the understanding of the text), or opts for the weaker NEG-Q reading to be on the safe side. Underspecified cases were therefore generally analysed as NEG-Q in the database. When read out aloud, the item to receive the most prominent stress in metalinguistic *all…not* constructions is likely to be the negator *not*,[70] rather than the quantifier as in the case of contrast. Although a few instances that can

[69] The applicability of Horn's (1985: 136) paraphrase for MN as 'I object to *u*', where *u* is an utterance and the objection can be on any grounds whatsoever, seems to be restricted to dialogic exchanges. For most of my examples, however, it is not suitable. For instance, it could not be used in example (55)a (section 4.7), as shown in (i) below:

(i) #To make a good will a man must be a free agent. But I object to 'all influences are unlawful'.

[70] This is due to the fact that it is the negator itself that functions as focus, while the rest of the sentence, being echoed, functions as topic or background.

be seen as either contrastive or metalinguistic (or both) are found in the data (see section 4.5), it is nevertheless important to distinguish these two fundamentally different ways of arriving at a NEG-Q interpretation. To enhance clarity, the various possibilities and their (approximate) proportions are shown in the pie charts in Figure 9.

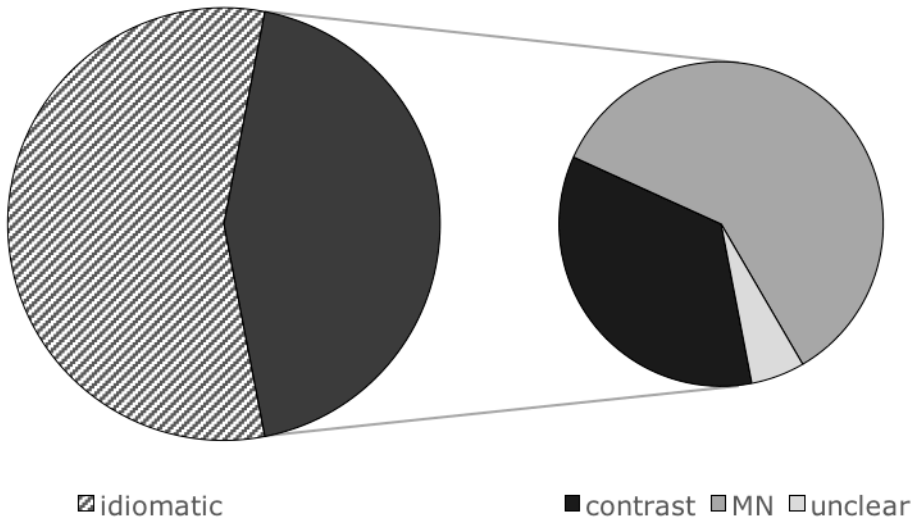

Figure 9. Proportions of idiomatic/free NEG-Q instances and approximate proportions of contrastive/MN/unclear free cases

As for the remaining NEG-Q instances, i.e. the idiomatic expressions (such as *all is not lost* or *all is not well*) that make up more than half of all NEG-Q cases (56%), I tentatively proposed a metalinguistic origin. They seem to be external negations of their non-negative counterparts, such as *all is well*. Today, however, their NEG-Q interpretation is most probably accessed directly as part of the semantics associated with the whole idiomatic construction. The cognitive entrenchment and saliency[71] of such idiomatic constructions and the fact that they are always associated with the NEG-Q reading might also have an impact on the interpretation of *all…not* constructions and could (at least partly) explain why out-of-context *all…not* constructions tend to be interpreted as NEG-Q rather than NEG-V by English speakers.

[71] According to Schmid (2007: 119), entrenchment is determined by "frequency of use with regard to a specific meaning or function in comparison with alternative expressions of that meaning or function." As shown in section 3.4.4, the meanings expressed by idiomatic *all…not* constructions are typically expressed as such, rather than with *not all*, and can thus be assumed to exhibit quite a strong degree of entrenchment. Entrenchment in turn influences saliency: "[D]eeply entrenched cognitive units are more likely to become cognitively salient than less well entrenched ones."

4.9 *All that glitters*, *es ist nicht alles* and metalinguistic negation in German

In section 4.5, I showed that the information-structural account of NEG-Q and NEG-V readings can be applied to both English and German *all…not* constructions. Unmarked predicate-focus leads to NEG-V interpretations, while contrastive focus on the quantifier gives rise to NEG-Q readings. In both languages, contrastive focus can be indicated by heavy stress and/or fronting. Fronting is more prevalent in German because it allows objects to be fronted much more naturally than English. In German, we therefore find a number of *all…not* constructions in which the quantified NPs function as objects rather than only as subjects. However, the proposed information-structural account proved insufficient for a number of English NEG-Q instances. In section 4.6, I suggested that these could be explained as involving metalinguistic or external negation. In such cases, an explicitly or implicitly echoed proposition, assumption or expectation is externally negated; because negation is external, it has wide scope over the entire rest of the sentence, including the quantifier. The result is thus usually a NEG-Q reading.

Although the majority of German NEG-Q cases appears to be analysable as involving contrastive focus on the quantifier, there are also some examples of metalinguistic NEG-Q readings. The first two, shown in (56)a and b (presented as (38)b in section 4.5), are relatively clear cases as they involve explicitly echoed material.[72]

(56) a. Ich habe alles organisiert, was du dir vorstellen kannst Nein, *alles* kannst du dir *nicht* vorstellen. [C4; NEG-Q]

b. Außerdem ist alles geschlossen um diese Zeit. – "*Alles nicht*", sagte Alexandra und begann, ihren Koffer zu packen. [C4; NEG-Q]

In (56)a, the speaker adjusts his first statement by echoing and negating *alles, was du dir vorstellen kannst*. He implies that he organised more things than the addressee can imagine. Sentence (56)b is not quite so clearly echoic as only the quantifier is repeated. However, the echoed material is in fact *alles ist geschlossen*. The fact that it is this proposition which is echoed and denied is so clear in this particular context that it allows the interlocutor to elide the predicate, and to repeat and negate only the quantifer. Example (57) is another explicitly echoic case, part of my own collection of *all…not* constructions. It was found in a blog on the internet.

[72] As in chapter 4.6, echoed material is underlined.

(57) Alles neu macht Gmail

by roli on 11.August 2010 · 5 comments

Naja ok *alles* ist *nicht* neu, aber Google hat Gmail (Google Mail) doch einem kleinen Facelifting unterzogen. [Keusch, 11 August 2010; NEG-Q]

The title of the blog grabs the reader's attention by alluding to the beginning of the German folksong *Alles neu macht der Mai*. The actual blog then softens the universal statement by negating it.

As these examples show, echoic denial, at least explicitly echoic denial, lends itself well to correction of self or others. It can therefore be expected to occur also in speech, maybe even more often than in writing. The spoken Swiss German example in (58) is a case in point; it was produced by my son (then aged 6:9) as a reply to my assumption that all children had taken something to recycle.

(58) Nei, *alli* händ *nöd* öppis mitgno. [boy, 6:9; NEG-Q]
no, all have not something taken
'No, everybody didn't take something.'

What is interesting in (58) is that the temptation to echo explicitly the material to be denied is so strong that it even overrides NEGATTRAC, which is normally obligatory in such cases (*nöd öppis/nicht etwas* 'not something' → *nüt/nichts* 'nothing' (cf. *Duden* [2006: 928]: "As a rule, negative-indefinite pronouns are selected rather than combinations with *not*").[73] However, NEGATTRAC would result in a wrong meaning in this case (*everybody took nothing*). The reason why the negator need not, and indeed cannot, associate with *öppis* here is precisely because the rest of the sentence is echoed. The situation is similar to the occurrence of positive polarity items in metalinguistically negated sentences in English. While a 'normal' negative sentence requires the negative polarity item *anything* (*everybody didn't take* ***anything***), the positive polarity item *something* can remain in a metalinguistically negated sentence when it represents echoed material (*I thought everybody took something. – No, everybody didn't take* ***something***).

In German, there is a way of avoiding constructions such as the one in (58), which can sound slightly odd, by using an impersonal *es*-construction (*es* V *nicht ALL*). Using this IMPERSONAL CONSTRUCTION, (58) could be rephrased as *'s händ nid alli öppis mitgno*/ *es haben nicht alle etwas mitgenommen* (literally 'it have not everybody something taken').

[73] Original: "In der Regel werden die negativ-indefiniten Pronomen […] gewählt […] und nicht etwa Verbindungen mit *nicht*."

Some corpus examples of this construction are given in (59)a-c. In most cases, the verb-slot is filled by the copula, as in (59)a, but there are also examples with full verbs, as in (59)b, and modals, as in (59)c. The negated impersonal construction seems to lend itself well to the function of external/metalinguistic negation. All the examples in (59)a-c can be interpreted as involving metalinguistic negation because what is negated is implicitly echoed material: either a common background assumption (that everything in a story is coherent in (59)a and that people usually know about their acquaintances' work in (59)b) or an expectation of something that is likely to be a problem in the particular context (the fear that things would remain in limbo in (59)c).

(59) a. Wir glaubten an irgendein Geheimnis. *Es war nicht alles* schlüssig in ihrem Erzählen. Auch die Gründe, weshalb Sebastian als Architekt aufhörte, waren zu blaß. [C4]

b. Wie reagieren deine Bekannten ausserhalb des Milieus auf dich? *Es wissen nicht alle*, was ich arbeite. Das ist meine Sache. [C4]

c. Wird er sprechen? *Es darf nicht alles* in der Schwebe bleiben. Diese Anstrengung muß zu etwas führen, muß seinen Schluß finden. [C4]

d. *Es ist nicht alles* Gold, was glänzt.

Note that all the examples in (59) could also be phrased as NEG-Q *all…not* constructions (*Alles war nicht schlüssig in ihrem Erzählen*; *Alle wissen nicht, was ich arbeite*; *Alles darf nicht in der Schwebe bleiben*).

The best known example of the impersonal construction occurs in the German version of the proverb *All that glitters is not gold*, shown in (59)d. An *all…not* construction is in principle also possible (*Alles ist nicht Gold, was glänzt*; this version yields only 751 results in a quick Google search) and also the usual *not all* paraphrase (*Nicht alles ist Gold, was glänzt*, more frequent with 10'500 Google hits), but the version in (59)d is by far the most common one (160'000 hits).[74] What is interesting about the impersonal construction in (59) is that it makes the external status of negation much more conspicuous; it is almost like negating the sentence with the external formula *It is not the case that*, but without demoting the negated material to a subordinate clause. Moreover, wide scope negation and thus the NEG-Q reading is much more readily available than in *all…not* constructions (which are potentially ambiguous), because the negator precedes rather than follows the quantifier.

[74] Another factor that might contribute to the popularity of this version is that it represents a perfect iambic metre, which makes it 'sound good' as a proverb.

Tobler (1902; see section 2.4) found this impersonal construction highly appropriate for conveying the wide scope negation meaning because it allows the negator to stand next to the verb and the quantifier. According to Tobler (1902: 192), the placement next to the quantifier makes sense because – to translate his statements into my terminology – the quantifier is the focus of negation. Tobler's observation tallies well with my belief that the impersonal construction is a particularly suitable way of expressing external negation. On the other hand, Tobler (1902: 193) affirms that the placement of negation next to the verb, as in the English or French *all…not* construction, is also "highly adequate by saying about the subject *all that glitters* that *being gold* must not be predicated of it".[75] So Tobler sees advantages in both ways of expressing metalinguistic/external negation: a construction that looks like nexal *not*, or the impersonal construction that places the negator before the quantifier. The question which of the two is more effective or adequate remains open for now. I will return to this issue at the end of this chapter.

Tobler (1902: 192) also notes that a structure similar to the German impersonal construction was available in older French: *n'est pas tout or quanqu'il reluit* ('NEG is NEG all gold that glitters'). A quick search on the internet (*Wictionary* and *Tatoeba*) shows that a number of other languages, mainly Germanic, but also Romance ones, provide similar structures:

Germanic:	
Dutch:	Het is niet alles goud wat er blinkt.
Norwegian (bokmål):	Det er ikke gull alt som glitrer.
Swedish:	Det är inte guld allt som glimmar.
West Frisian:	It is net allegearre goud wat der blinkt.
Faeroese:	Ikki er alt gull, ið glitrar.
Icelandic:	Ekki er allt gull sem glóir.
Romance:	
Italian:	Non è tutto oro quel che luce.
Spanish:	No es oro todo lo que reluce.

Almost all the Germanic languages exhibit the German impersonal construction pattern; apparently, only Faeroese and Icelandic can do without the impersonal *it*, instead placing the negator right at the beginning of the sentence, in the same way that pro-drop Romance

[75] The original reads: "Darum ist denn auch der französische Ausdruck, der die Negation in die engste denkbare Verbindung mit dem Verbum, dem Kern der Aussage, bringt, ein im höchsten Grade angemessener, indem er besagt: von dem Subjekte 'das Glänzende' darf 'Gold sein' nicht prädiziert werden."

languages do.[76] Interestingly, English once seems to have possessed a similar impersonal construction, which is exemplified in sentence (60), an excerpt from *Hali Meiðhad* (1982: 4 [leaf 55]), an early thirteenth-century alliterative homily. It is the earliest English attestation of the proverb I found. The original is shown in (60)a and the modernised version (*Hali Meidenhad* 1866) in (60)b.

(60) a. Nis hit nower neh gold, al þet ter schineð.
not-is it never no gold all that there shines

b. It is by no means all gold þat glitters in þat station,...

While the modernised version in (60)b exhibits the same structure as the German impersonal construction, the original (60)a is characterised by negative concord and a mixture of the Germanic and the Romance pattern. On the one hand, negation occurs sentence-initally (as in Romance-type sentences) as the negated copula *nis*; on the other hand the impersonal pronoun *hit* is also part of the sentence (Germanic pattern). Moreover, the quantifier in (60)a appears late in the sentence, following rather than preceding *gold*. This is probably due to two factors: (a) negative concord and (b) a preference for not splitting the antecedent *all* from its relative clause and for placing this heavy constituent at the end of the sentence. However, at least to my modern understanding, the greater distance between negation and the quantifier makes the NEG-Q reading more difficult to access.

The next English attestation of the proverb I found is from Chaucer's *The Canon's Yeoman's Tale* (962-965) and thus more than a hundred years younger than (60)a;[77] it is presented here as (61).

(61) But al thyng which that shineth as the gold
Nis nat gold, as that I have herd it told;
Ne every appul that is fair at eye
Ne is nat good, what so men clappe or crye.

The proverb as rendered by Chaucer already features the modern word order of an *all…not* construction (apart from the proclitic negation of the copula due to negative concord).[78]

[76] The older French version given by Tobler has the same structure as the modern Spanish and Italian versions. It seems that French lost the alternative of the impersonal construction together with the ability to drop pronouns.

[77] According to Benson (1988: xxv), the general editor of *The Riverside Chaucer*, *The Canon's Yeoman's Tale* can be dated to 1396-1400, "though part of [it] is probably earlier".

The earliest attested German version of the proverb, shown in (62), predates even the *Hali Meiðhad* one; it appears in verse 1959 of the *Rolandslied des Pfaffen Konrad*, a German translation of the French *Chanson de Roland* from around 1170.

(62) "under sconem schade luzet,
under beautiful harm lurks
iz en ist nicht allez golt daz da glizzit."
it NEG is not all gold that there glitters.

This early attestation is already very similar to the modern German impersonal construction. The only difference is the double marking of negation with *en-nicht* (similar to modern French *ne-pas*), which was the usual way of marking negation at the time.

The modern German *es ist nicht alles* construction is thus not a new or exceptional structure. It appears in other Germanic (and Romance) languages and seems to have existed in English as well. In fact, I even found a handful of present-day English impersonal cases in the BNC, shown here in (63)a-d.

(63) a. Further evidence that *it is not all* plain sailing for individuals seeking to make their mark in this recession is provided by the experience of Graham Chapman, latterly finance director of fashion retailer Kookai. [CBT:991]

b. I would also like to show that *it is not all* doom and gloom and that, finally, steps are being taken to remedy the dire situation. [CK3:918]

c. But on the eve of the All Ireland Leagues *it isn't all* gloom and doom, and the Irish international No 8 remains defiantly upbeat and optimistic. [K32:2661]

d. Even if this argument is unsuccessful, it should be kept in mind that *it is not all* security interests which will be prejudiced by automatic crystallisation but only those lacking priority to a crystallised floating charge. [GVG:720]

Examples (63)a-c are all structured in the same way as the German impersonal constructions (cf. examples (59)a-c). Sentence (63)d is interesting in that it resembles the structure of the German proverb, as it is followed by a relative clause, or at least by what looks like a relative clause. In fact, (63)d is an *it*-cleft construction.[79]

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[78] Note, however, the *all…not* construction following the proverb (lines 964-965), where a negator also precedes the quantified NP *every appul*.

[79] Note that in both English and German, cleft sentences are made up of impersonal *it*, the copula and the highlighted element followed by the clefted clause. The status of this clefted clause is subject to debate. Quirk et al. (1985: 1386) point out that, even though the "second clause in a cleft sentence is obviously similar in structure to a restrictive relative clause", "there are considerable differences". The *Duden* grammar (2006: 1044), on the other hand, lists Spaltsätze as a special kind of relative clause. Since these differences are immaterial for the present discussion, I will refer to the second clauses as clefted clauses.

So far, I have called the *es ist nicht alles* structures shown in (59) IMPERSONAL CONSTRUCTIONS.[80] However, the sentences in (63) demonstrate that we may in fact be looking at two different, though possibly related, structures. Quirk et al. (1985: 1391) refer to structures like the ones in (63)a-c, which are derived by a rule "subject + predicate ~ *it* + predicate + subject", as cases of EXTRAPOSITION. Although most of the secondary literature claims that, at least in Modern English, only clausal subjects can be extraposed, the evidence from the BNC shows that extraposition is not impossible with nominal subjects.[81] Nevertheless, structures like (63)a-c with non-clausal subjects appear to be quite rare in Modern English.

Sentence (63)d, on the other hand, is not a case of extraposition, but, as was pointed out above, a typical English *it*-cleft. In fact, the German *all that glitters*-proverb given in (59)d also looks like an *it*-cleft, or Spaltsatz, as it is called in German. Possibly *it*-clefts are related to cases of extraposition. And indeed, in certain conditions it is difficult to distinguish the two constructions. Calude (2008: 21), one of the rare studies of both *it*-clefts and extraposition, proposes a test for distinguishing the two:

> 1) Eliminate *it*.
> 2) Move sentence-final clause to the front of the sentence.
> 3) If the construction obtained is grammatical, then the original structure is an example of extraposition. If, on the other hand, the construction obtained is ungrammatical, then the original structure is a cleft.

Applying this test to example (63)d results in an ungrammatical sentence (**Which will be prejudiced by automatic crystallisation is not all security interests*) and thus shows that (63)d is indeed an *it*-cleft. However, the German version (59)d of the *all that glitters* proverb, which seems to be a Spaltsatz as well, turns out to be a case of extraposition, since applying Calude's test results in a grammatical sentence (*Was glänzt ist nicht alles Gold*).[82]

Most German examples of the impersonal construction I looked at appear to be cases of extraposition. However, as Calude's (2008) study shows, the distinction between extraposition and *it*-clefts can be tricky; moreover, nominal extraposition can also be difficult to

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[80] The following paragraphs my seem like a somewhat irrelevant digression concerned with the grammatical structure of the impersonal construction; however, the reason for including this digression will become clear later on.

[81] "The examples given by Pérez-Guerra (1998) for extraposed NPs and extraposed PPs are all from Middle English, none being from Modern English" (Calude 2008: 29).

[82] Sentence (59)d is actually a case of double extraposition, since the relative clause *was glänzt* is also extraposed and so separated from its antecedent *alles*. Without this second extraposition, the sentence looks like this: *Es ist nicht alles, was glänzt, Gold*. The entirely non-extraposed version is *Gold ist nicht alles, was glänzt*. Obviously, the latter sentence has a different focus-structure than its variants.

distinguish from right dislocation (cf. Michaelis and Lambrecht 1994). Since these distinctions are not the focus of the present study, I will continue to refer to the *es V nicht* structures in question as IMPERSONAL CONSTRUCTIONS. It should also be noted that I am only concerned with the negative versions of these constructions here. To refer to the structures in question with just one label also makes sense because, as I will argue shortly, in German this negative impersonal structure has a uniform function. The same cannot be said about *it*-clefts and extraposition in general. While the major function of *it*-clefts is to put (mainly contrastive) focus on the fronted element, the most important reason for clausal extraposition is the avoidance of heavy subjects (cf. Biber et al. 1999: 725 and 962; Quirk et al. 1985: 1384f. and 1391f.).

The uniform function of negative impersonal constructions in German was already hinted at above in the discussion of the examples in (59), where I argued that this structure is particularly suitable for expressing external negation. I showed that the negated material in the examples in (59) is implicitly echoic and negation is thus metalinguistic/external. This is generally the case with German impersonal constructions. Some additional examples, which were extracted from the corpus *Zürcher Tagesanzeiger*, accessed through the project COSMAS II, are shown in (64)a-c.

(64) a. Diese Aufgabe als Trainerin lenke sie etwas ab, bringe Zerstreuung und eine gewisse Befriedigung. "*Es soll* sich *nicht alles* nur um meinen Sport drehen; dank dieser Tätigkeit verbohre ich mich nicht zu sehr in mich selbst." Durch eine neue Perspektive gewinnt sie so Distanz zum Sport, ohne die Nähe dazu zu verlieren. [09-07-1996: 53]

b. Zurzeit, sagt Hildegard Hamm-Brücher, schwappe eine Nostalgiewelle über die neuen Bundesländer: *Es war nicht alles* schlecht zu DDR-Zeiten. [27-12-1996: 19]

c. "*Es ist nicht alles* Käse, was aus der Schweiz kommt." [17-08-1999: 45]

Again, the sentences in (64) are implicitly echoic and thus examples of metalinguistic/external negation. Sentence (64)a is about a sportswoman whom people expect to be concerned with nothing but her sport. The interviewee, however, states that she does not want this to be the case and that therefore she also works as a coach. Similarly in (64)b, the denial of the wide-spread assumption that everything in the German Democratic Republic was bad serves to explain the current nostalgia in the New Federal States. By contrast, the reason for the impersonal construction in the witticism in (64)c is twofold: First, (64)c plays on the cliché that Switzerland is famous for its cheese and denies the assumption that

Switzerland produces nothing but cheese; at the same time, *Käse* informally also means 'rubbish', so an additional meaning is that Switzerland does not produce rubbish only. Secondly, (64)c is of course also a (loose) variation of the proverb *Es ist nicht alles Gold, was glänzt* in (59)d.

All the sentences in (64), like the ones in (59), could also have been phrased as *all…not* constructions. German thus seems to offer at least two possibilities for expressing metalinguistic/external negation. The impersonal construction can thus be seen as a 'competitor' of (NEG-Q) *all…not* constructions and may explain the scarcity of German NEG-Q *all…not* constructions relative to their frequency in English. As this seems a good explanation for the differences concerning the NEG-Q reading between English and German, I extracted all impersonal constructions involving *all* from C4. The aim was to find out whether all of them could also be phrased as *all…not* constructions and if so, whether their number is high enough to account for the difference between frequencies of the NEG-Q reading in English and German.

The result is fairly sobering: I found only 16 impersonal constructions involving *all* in C4. Although this is quite a low figure, the impersonal construction occurs as frequently as *all…not* constructions in the NEG-Q sense (17 cases in C4). All of the 16 impersonal constructions can be rephrased as *all…not* constructions. If the impersonal constructions are added to the German NEG-Q cases (because impersonal constructions are only a marginal possibility in English), we end up with 33 cases. Compared to the other *all…not* constructions in C4 (NEG-V and COLL), this is a percentage of only 19%. In the BNC, by contrast, the NEG-Q reading makes up 54% of all cases and without the formulaic expressions, which do not exist in German, 38%.[83] Although the impersonal construction can thus account for part of the difference between English and German, the ratio of the NEG-Q reading in English is still twice as high as in German.

However, considering that *all…not* constructions are generally more frequent in German than in English, it is advisable not to look at the relative frequency of the NEG-Q cases compared to the other readings, but rather at their frequency of occurrence per million words. In the BNC, there are 2.6 NEG-Q *all…not* constructions in one million words, but only 1.35 in C4. If the sixteen impersonal constructions are added, the result is comparable to the English figure with 2.79 pmw. From this perspective, then, the im-

[83] As has been suggested before, the idiomatic expressions may also facilitate the non-idiomatic uses of NEG-Q *all...not* constructions in English and thus could also contribute to the differences in frequency between English and German NEG-Q constructions.

personal construction can account for the lower frequency of occurrence of German NEG-Q *all…not* constructions.

Put differently, roughly half of the English NEG-Q *all…not* constructions are phrased as impersonal constructions in German, rather than as *all…not* constructions. This is more or less the amount of NEG-Q cases that are metalinguistic rather than contrastive in English. I argued earlier that the impersonal construction in German is an ideal device for expressing metalinguistic negation and the figures discussed here suggest that the metalinguistic cases, which are expressed as *all…not* constructions in English, tend to be realised as impersonal constructions in German. The reason why the ratio of NEG-Q readings in relation to the total number of *all…not* constructions is still much lower in German than in English, even if the impersonal constructions are included, is that the overall frequency of *all…not* constructions is higher in German than in English. There are thus relatively more NEG-V and COLL *all…not* constructions in German than in English; the lower frequeny of NEG-Q cases in German can be explained by the metalinguistic impersonal constructions.

We can only speculate on other possible reasons for the comparative lack of German NEG-Q instances. On the one hand, contrastive NEG-Q cases may be more frequent in speech than in writing – but unfortunately, this cannot be investigated without much larger spoken German corpora. On the other hand, German lacks the formulaic NEG-Q expressions typical of English (writing). Moreover, it seems that the paraphrase *nicht alle* is used more often in German than the corresponding *not all* in English. A very rough search without any manual cleanup reveals that *nicht ALL* occurs 616 times in C4 (55 pmw), while there are 3430 instances or 35 pmw only of *not all* in the BNC.[84] The frequency of *nicht ALL* in German thus seems to be considerably higher than of *not all* in English and could indicate that German NEG-Q meanings are expressed less often as *all…not* constructions.

It is now time to return to Tobler's claim that what looks like nexal *not* is a particularly suitable means for negating an entire judgment, or in other words for the expression of metalinguistic/external negation. This claim seems to be accurate in the case of English. The figures suggest that English tends to use nexal *not* for negating statements externally, rather than using explicitly external negation. The reason is probably that paraphrases that make negation explicitly external (as for instance *It is not the case that*)

[84] In case of the BNC figures, I searched for all instances of *not/n't all* and deducted the number of *not/n't all that*, as the majority of the latter mean 'allzu' in German, as for instance in *it is now not all that good* [A18:777].

are too cumbersome and stilted.[85] Although nexal *not* for the expression of external negation is also an option in German, the circumstantial evidence presented above strongly suggests that the negated impersonal construction *es* V *nicht* (*ALL*) is the preferred way of expressing external negation. Of course this impersonal construction does not need to involve a quantified expression. An example of an impersonal construction externally negating a statement without any quantified expressions is presented in (65).

(65) *Es ist nicht* der Fluss, der fliesst, es ist das Wasser.
[<http://www.ara-bern.ch/>]

Sentence (65) appears as a prominent caption on the website of a sewage treatment plant, together with a bird's eye view of the plant next to a river. Again, the impersonal construction is a typical case of metalinguistic negation. People normally say that the river flows (*der Fluss fliesst*). This common way of stating affairs is denied here to draw attention to water, which is the plant's main concern. If nexal *not*, rather than the impersonal construction, is used to deny the sentence, as in *Der Fluss fliesst nicht*, the result is an apparent truth-functional contradiction. This is typical of metalinguistic negation (cf. section 4.6) and the special effect that is created is sometimes intended. The impersonal construction available in German, however, represents a possibility of negating externally without garden-pathing and similar effects. As has been argued above, the impersonal construction thus offers an additional means of negating externally and is most likely the best way to account for the observed differences in the frequency of NEG-Q *all…not* constructions between German and English.

4.10 Summary of chapter 4

In the preceding long chapter 4, which includes detailed qualitative analyses of the corpus data, I tried to pin down factors that allow disambiguation of the potentially ambiguous *all…not* construction. Here is a brief summary of the most important points to facilitate readability. In chapter 4.1, I gave examples of particular lexical items that force certain readings (e.g. *same*, *other*, *almost*). Chapter 4.2 dealt with structural and syntactic factors, such as coordination, which is usually associated with a NEG-V reading. Interesting correlations were found between the status of *all* as either pronoun or predeterminer and

[85] There are only 36 cases (0.37 pmw) of *it is not the case that* in the BNC; 21 of these occur in academic prose. Horn (1989: 467), too, notes that "linguistic analogues of this logical connective [i.e. external truth-functional negation] are never (or hardly ever) found."

the complexity of the quantified NP. *All…not* constructions where *all* functions as a pronoun are (almost) invariably NEG-Q. The majority of these are formulaic. The potential for real three-way ambiguity is thus found in the category of non-formulaic *all…not* constructions where *all* functions as a predeterminer (*all* NP V *not*). Previous studies of *all…not* constructions typically investigated exactly this category, which is problematic as the full range of possible structures is not included and results may be skewed. The complexity of the quantified NP was also shown to play a role (for instance, the likelihood of a NEG-Q interpretation decreases as the complexity of the quantified NP increases). Chapter 4.3 demonstrated that often lexical and structural factors alone are not enough for successful disambiguation and that the wider linguistic context has to be taken into consideration. Apart from the strictly linguistic context, world and specialist knowledge also play an important role, as was shown in the examples in chapter 4.4.

Chapter 4.5 set out to develop a more general account of disambiguation in an information-structural approach. The analysis of numerous real language examples showed that the canonical or unmarked sentence structure with predicate focus results in narrow scope negation (i.e. NEG-V or COLL readings) as in these cases the subject (including the quantifier *all*) functions as the topic, which lies outside the scope of negation. The NEG-Q reading, on the other hand, is derived in cases with contrastive focus on the quantifier, which allows negation to take wide scope over the quantifier. Both mechanisms were shown to operate in English as well as in German.

To supplement the information-structural account, which cannot be applied to all NEG-Q cases, a further mechanism for arriving at wide-scope negation was developed in chapter 4.6. The relevant cases involve metalinguistic negation. The defining criterion of these cases is that they are explicitly or implicitly echoic. The echoed material is sealed off from negation, (which explains certain typical features of MN, such as the occurrence of PPIs despite negation), so that semantically the result is external negation. Negation thus takes scope over the entire sentence, including the quantifier. These cases were therefore analysed as NEG-Q, although they are in fact often underspecified. Underspecified cases can be paraphrased as *not all or even none* (NEG-Q or even NEG-V) because for the purpose of the text/exchange the addressee has no need to disambiguate. Both addressees and analysts, however, are on the safe side to abide by the weaker NEG-Q reading.

The distinction of the contrastive and the metalinguistic NEG-Q cases is an important finding of the present study. The existence of examples that can be analysed as both contrastive and metalinguistic shows that these two mechanisms of arriving at NEG-Q interpretations are not mutually exclusive. In chapter 4.7, I argue that this fuzzy distinction

is, however, neither a theoretical nor a practical problem; rather, the distinction yields interesting new insights.

One of these insights is that, although some metalinguistic *all…not* constructions can be found in German as well as in English, it seems that external negation is preferably expressed by other means in German. One possibility, discussed in detail in chapter 4.8, is the impersonal construction *es* V *nicht ALL*. This impersonal construction exists also in other languages and is attested quite early in the history of both English and German. The impersonal construction can (partly) explain the lower frequency of (free) NEG-Q *all…not* constructions in German compared to English.

5 *All…not* constructions: Functions and *raisons d'être*

In the preceding chapters I dealt with the frequency of *all…not* constructions and their different readings in English and German, and identified the mechanisms that give rise to these readings. I also demonstrated that *all…not* constructions are very rare and marked, which raises the question why the existing unmarked – and unambiguous – paraphrases for the different readings are not used instead. This issue is not discussed anywhere in the literature. While all previous studies are interested in how *all…not* constructions are interpreted (and sometimes why a particular interpretation is chosen), the reasons for the choice of these constructions remain to be uncovered.

Most authors agree that the NEG-Q reading can most naturally be paraphrased with *not all*, and even more note that the most natural way of expressing the NEG-V reading is with lexicalised negative quantifiers like *no*/*none*. For the COLL reading there is no similarly convenient and widespread paraphrase. Two possibilities are *the sum of* or *not even all (together)*, but what paraphrase is suitable in each case depends on the particular context.[1]

The existence of the unmarked paraphrases for the NEG-Q and the NEG-V readings indicates that the use of the rare, marked and theoretically ambiguous *all…not* construction is likely to be associated with special communicative goals. However, finding the reasons for the choice of *all…not* constructions in a corpus is a difficult task. The speakers and writers of the texts cannot be asked about their intentions in choosing particular structures. Moreover, it is doubtful whether they would be able to answer such questions, since the choice of certain structures is usually not a conscious process. There are, however, indications in the texts themselves. The detailed qualitative analysis of the corpus data can reveal recurrent patterns and typical uses of *all…not* constructions and thus provide clues as to their likely functions. In what follows, I will discuss the three different readings in turn, showing that there are a number of different reasons for the choice of *all…not* constructions, such as formulaicity, anaphoric and emphatic use, as well as structural, stylistic, and information-structural factors.

[1] Sometimes *not all* can be used for the COLL sense, but this use seems to be archaic and/or literary (cf. section 2.4, Jespersen 1966 [1917]: 90 and Taglicht ND: 10, note 6).

5.1 The COLL sense

There are no unmarked alternatives available for the COLL sense, so the reason why such meanings are expressed as *all…not* constructions is not really an issue. Nevertheless, typical uses of COLL *all…not* constructions can be identified. First, the formulaic COLL *all…not* constructions, which were discussed in section 3.4.4, make up a substantial part of all COLL instances (35 or 26%). As previously mentioned, no clearly formulaic expressions were found in the German data. Secondly, another 26% of the English COLL instances contain anaphoric *all (of) this*. (If formulaic expressions with *all this* are included as well, the amount of the anaphoric cases is even higher at 33%). This anaphoric use is illustrated in (1)a-c:

(1) a. All my pleasures will be solitary, even when I happen to be in company; I shall not be exhilarated simply because the people around me are enjoying themselves, nor depressed because they are in low spirits. Clearly ***all* this** is *not* going to be much fun, but my aim is egoism and not hedonism. [CB1:432; COLL]

b. [Alfred] had taken such drastic measures against evil as hanging Viking prisoners, and rebellious monks, and in all probability cutting the throats of any wounded pirates so unlucky as to be left on the battlefield. ***All* this** did *not* stop Alfred from being a Christian king; indeed some of his recorded behaviour seems almost Quixotically forgiving. [CDV:97; COLL]

c. Whether they be railwaymen, groundsmen, caretakers, cooks or cleaners, Basil showed consideration for the appreciation of the work they performed and warmth for them as people. ***All* this** is *not* to say that Basil was incapable of showing normal human impatience or intolerance. [EVH:1398; COLL]

In the examples of this kind, *all this* always refers back to the totality of the things mentioned in the preceding context. Taglicht (ND) found three instances of COLL *all this(/that)* in his corpora (37.5% of his COLL instances). Anaphoric *all this* occurs quite often with FACTUAL VERBS (according to Quirk et al. 1989: 1180f.) such as *mean*, *say* or *suggest* as in example (1)c. It might be argued that the thirteen examples I found with such factual verbs are also formulaic expressions, although I did not include them in that category in section 3.4.4 because various different verbs are involved. The corresponding anaphoric *all dies/das* also exists in German. However, these anaphoric cases make up a much larger portion of the COLL readings in German with 33 cases in C4 (69% of the COLL cases) and 96 cases in deWaC (86%). They function in much the same way as the English cases, except that in German the word order can also be turned around so that the

quantifier follows rather than precedes the demonstrative and thus functions as a noun (*dies/das alles*). The quantifier follows the demonstrative in 26 or 79% of anaphoric cases in C4, and in 54 or 56% of such cases in deWaC. Examples are shown in (2)a and b.

(2) a. Unser Mitglied, Stadtarchivar M. Fischer, sah einen Neubau am frisch angelegten Fussweg gegen das Höfli. ***All* das** war *nicht* ausführbar. [C4; COLL]

b. Vielleicht hätte das Bühnenbild, stilisiert, nur mit passendem Mobiliar versehen, eleganter und stimmiger gewirkt. Aber **das *alles*** ist *nicht* so wichtig. [C4; COLL]

Of course, (anaphoric) demonstratives also occur with NPs in a number of cases (27 or 20% of COLL cases in BNC, 5 or 10% in C4 and 7 or 6% in deWaC), as illustrated in (3)a for English and (3)b for German.

(3) a. "It's a tragedy that ***all* those millions of pounds of investment** are *not* going to create many jobs. But that, I am afraid, is the way of the world." [B7F:42; COLL]

b. In seinen Augen lag eine Klugheit, die weit über sein Alter hinausging; doch *all* **dies Frühreife Wissen** hinderte ihn *nicht* daran, ständig herumzualbern und viel zu lachen; seine Anwesenheit war die reinste Freude. [deWaC; COLL]

But the anaphoric use without NP is clearly more typical of the COLL readings, both in English and German, than cases like (3) with NPs.

Thirdly, in some COLL cases with NP, especially when the quantified NP is uncountable, the function of *all* is emphatic or reinforcing rather than quantificational, as illustrated in (4)a and b for English and (4)c for German (see also (3)b). As far as the propositional content is concerned, *all* is strictly speaking redundant in these cases. As will be shown later on, this emphatic function of *all* also occurs in NEG-V readings.

(4) a. She expected him to keep looking over his shoulder to make sure that *all* the fuss was *not* intended for the man behind. [A68:2608; COLL]

b. "*All* this modelling is*n't* half as glamorous as it's made out to be." [AJJ:69; COLL]

c. Doch *all* diese propagandistische Schönfärberei konnte *nicht* über die politische Realität hinwegtäuschen. [C4; COLL]

d. Die Folge: Kennedy, nicht gut genug beraten, fragte den Bundeskanzler, ob er denn mit Paris lieber als mit Washington zu gehen gedenke. *Alle* diplomatische Ungeschicklichkeit beschädigte die Aussöhnung *nicht*, …. [C4; COLL]

In this function as an intensifier or emphatic marker, *all* could also be replaced by *whole* in English or *ganz* in German.[2] Roughly 20% of the English COLL instances contain such an emphatic *all*, which is always followed by a definite NP and often occurs with uncountable nouns. The construction with this function seems to involve a certain negative semantic prosody, since the intensifier *all* typically co-occurs with nouns that denote something unpleasant or annoying (at least in that particular context), and so augments the sense of annoyance, as is the case in examples (4)a and b. This emphatic/redundant[3] use of *all* is less frequent in German COLL cases.

The rest of the COLL *all…not* constructions are mostly used in the sense 'not even all N can…', both in English and German. This meaning is comparable to that expressed by the idiomatic expression *all* NP *in the world* V *not*. Typical examples of the *not even all* sense are shown in (5):

(5) a. *All* the most lovely words of love and passion could *not* express one tenth of what I feel for you. [ABL:505; COLL]

b. Yet *all* her precautions do *not* seem to have prevented the 26-year-old woman from abduction. [CBF:12392; COLL]

c. Die Prinzessin verlangt, dass ihr der Faden mit Gold aufgewogen wird, doch *alles* Gold vermag *nicht*, den Faden im Gewicht zu erreichen. [deWaC; COLL]

d. Zwar haben die Menschen in den letzten 20 Jahren eine unvorstellbare Computerpower angehäuft, aber *alle* bisher produzierten Rechner zusammen würden *nicht* einmal reichen, um das Schicksal einer Kaffeetasse für ein paar Minuten vorherzusagen. [deWaC; COLL]

In the *not even all* sense, the implication is that more of the particular NP would make the meaning of the predicate more likely. Thus in (5)a, the assumption is that the more words are used, the more likely the speaker is able to express what he feels. In (5)b, the more

[2] Biber et al. (1999: 512-513) note that *whole* typically has evaluative function in conversation, although it is otherwise a relational classifier. They do not say anything about this function of *all*, however. The word order with *whole* and *ganz* is obviously slightly different as both are adjectives rather than pre-determiners or pronouns (*all the* vs. *the whole*), but the point is that the semantic effect is comparable.

[3] The label emphatic/redundant may seem paradoxical. It was chosen because, on the one hand, this use of *all* is pragmatically emphatic. From a purely truth-conditional perspective, on the other hand, *all* is redundant in its core quantificational sense.

precautions the woman takes, the more likely she is to succeed in not becoming a victim of crime. As was already pointed out, the vast majority of the remaining COLL *all…not* constructions are used in this *not even all* sense. However, there are a few cases with the opposite implication, i.e. the more of the particular NP, the less likely the predicate. This use is exemplified by sentence (6).

(6) "*All* the pressures of people having a go at me all the time do*n't* help," said Kylie. [ADR:1235; COLL]

This sentence cannot be paraphrased as *not even all the pressures of people having a go at me all the time help*. Rather, the more pressures there are, the less this will help the speaker. Taglicht, too, notes that there are cases where 'more' is not 'better' but 'worse'. His example is *All those aspirins can't have done you any good* (Taglicht ND: 3; cf. section 2.6). While one or two aspirins might have helped, the excessive use of aspirin cannot be good, so the more aspirins are taken, the worse the situation gets. This reversal of 'more-is-better' is probably related to the emphatic function of *all*, as presented in examples (4). Rather than being a universal quantifier, in such cases *all* is used hyperbolically to express that there was/were a lot of N with respect to the particular context (for instance a lot of pressure in (6) or a lot of aspirins in Taglicht's example). When *all* is used in this emphatic function, the 'more-is-better' implication can be turned around. But the majority of the remaining COLL *all…not* instances can be paraphrased with *not even all*, which is the most typical sense of COLL *all…not* constructions, apart from the anaphoric function of *all this*.

5.2 The NEG-V sense

Turning to NEG-V *all…not* constructions, their choice over more usual paraphrases with *no/none* in English and *kein* in German seems to be due to quite varied reasons. These appear to fall into three main groups: the NEG-V sense is expressed with an *all…not* construction for either structural, stylistic or information-structural reasons. Some of the structural reasons were mentioned in earlier sections, for instance coordination in the subject or predicate (cf. section 4.2). Coordination not only forces a NEG-V interpretation from the reader's/hearer's perspective; it can also be regarded as a reason for the choice of *all…not* constructions. This is illustrated by the examples in (7). In (7)a, for instance, a paraphrase with *no*/*none* would not work for the first two NPs of the coordination. A paraphrase with *no*/*none* for the third NP would therefore lead to a coordination of two

sentences, a negative one with nexal *not* and a positive one with the negation implicit in the negative quantifier. Such an inelegant paraphrase is shown in (7)a'.

(7) a. So Structuralism, Chomskyism **and** *all* our official Linguistics are *not* exactly wrong but they are radically incomplete. [J7U:26; NEG-V]

a'. So Structuralism and Chomskyism are not exactly wrong, and (in fact) none of our official Linguistics is exactly wrong, but …

b. Check that *all* cables are firmly in their sockets **and** have *not* worked loose. [HAC:2088; NEG-V]

c. *Alle* Feldprediger sollen die gleichen Bedingungen haben **und** *nicht* vom guten Willen ihres Kommandanten abhängig sein. [C4; NEG-V]

c'. Alle Feldprediger sollen die gleichen Bedingungen haben und kein Feldprediger soll vom guten Willen seines Kommandanten abhängig sein.

d. Vater, Mutter **und** *alle* Verwandten freilich konnten den sonderbaren Buben *nicht* begreifen. [C4; NEG-V]

Similarly, for a paraphrase of NEG-V *all…not* constructions with a coordinated predicate, it is necessary to repeat the subject. A paraphrase of (7)c is shown in (7)c'. It seems that in these cases *all…not* constructions are chosen to avoid the rather long-winded and inelegant paraphrases with *no*/*none* and *kein*, respectively.

Another case where the *no*/*none* paraphrase is not possible for structural reasons are sentences containing several quantifiers in the same NP, such as *some or all N*. Two examples of this kind are shown in (8).

(8) a. But if a total consciousness is an organic whole, then **some or *all*** of these parts could *not* exist in the same character in another different sort of whole. [CS2:464; NEG-V]

b. At this stage, **most if not *all*** expert systems can*not* be used by naive users; a reasonable general knowledge of the area of expertise covered by the system (its knowledge domain) is essential if the output produced is to be taken seriously, [HXD:404; NEG-V]

In sentence (8)b, a paraphrase with *no*/*none* is possible, but only if the quantifier *most* is changed to *few* (*few or even no expert systems can be used by naïve users*). Although this would involve hardly any or even no change of propositional meaning, it would involve a shift of emphasis. Interestingly, the potential paraphrase of (8)a (*not all or none of these parts could exist…*) shows that the **I** corner (*some*) and the **O** corner (*not all*) of the Square of Oppositions (cf. section 2.3) cannot always be collapsed without a change in meaning.

Cases corresponding to (8)a and b were not found in the German data, but are in principle conceivable.[4]

Another reason for the choice of NEG-V *all…not* constructions which could be termed structural is the presence of a verb that favours nexal negation over lexicalised negative quantifiers. It should be noted that this argument is highly speculative and that the preference of certain verbs for nexal *not* would have to be verified empirically and independently. Two candidates for this category are shown in (9)a and b.

(9) a. *All* these setbacks did*n't* matter, old chap, because the referee only has eyes for the big boys. [CHV:164; NEG-V]

b. On the opposite side the canal's former contents, removed by dredger, made a barricade of frozen mud and rubbish six feet high. […] Clare stopped and folded her arms, facing it. "Caro, this is wonderful. This makes me glad I flew three thousand miles to see it. Millside's answer to Guggenheim. *All* the galleries of New York do *not* contain its equal – ". [HJH:3873; NEG-V]

The fact that the verb *matter* appears to prefer nexal *not* may have to do with the idiomatic expression *it does not matter*, so that sentence (9)a could be regarded as a semi-formulaic example. This interpretation that the verb *matter* shows a preference for *not*-negation finds independent support in the *Longman Grammar*. According to Biber et al.'s list of lexical verbs co-occuring with *not*/*n't*, the verb *matter* and *not*/*n't* have a mutual information index of 15-19 (Biber et al. 1999: 174). "The mutual information index is based on the probability of observing two words together compared to the probability of observing each word independently" (Biber et al. 1999: 40). Apart from the possible preference of *matter* for nexal *not*, it seems to me that the use of *all* emphasises the totality or universality of the statement to a greater degree than the use of *no*/*none* (this is also the case in other examples). There is strong emphasis in (9)a on the fact that not a single one of the setbacks mattered and in (9)b that not one of the galleries contains its equal. In fact, the examples in (9) are borderline cases between NEG-V and COLL and could also be analysed as COLL. Although the COLL reading is not really possible on a strictly propositional level, it could make sense as an exaggeration in example (9)b, which is an ironic joke.

Apart from such structural reasons, there are various cases where NEG-V *all…not* constructions seem to have been chosen for stylistic or rhetorical reasons. An example of a

[4] A constructed example is shown in (i):
(i) Die **meisten** wenn nicht ***alle*** Kinder essen *nicht* gerne Spinat.

rhetorical device are *all…not* constructions occurring in parallel structures, such as the ones illustrated in (10); the parallel structures are shown in bold print.

(10) a. Craig and Wedderburn showed that while **almost all** industrial workers **have to** clock in, **almost *all*** managers do *not* **have to** do so; ….
[FR4:460; NEG-V]

b. We should try to stop cutting **all the trees** down because soon ***all* the animals** wo*n't* have homes. There'll be **no animals** left and **no trees**.
[K1M:2748, NEG-V]

Sentence (10)a perfectly illustrates the use of a parallel *all…not* construction. It involves two parallel constructions with *almost all*, one of which is negated so that the two are juxtaposed. While a certain predicate (having to clock in) applies to X (industrial workers), the same predicate does not apply to Y (managers). If the negated version were expressed by a paraphrase like *no managers have to do so*, the (criticised non-)parallelism between the two propositions would be lost on the linguistic level. The rhetorical effect of the parallel constructions in (10)b is not juxtaposition, but an emphatic appeal. The subsequent context stresses the urgency of matters through the repetition of the statement with the universal quantifiers changed to the lexicalised negative universal quantifiers. Thus the use of NEG-V *all…not* constructions for stylistic reasons always encompasses an element of emphasis.

This is also the case when *all* is used as a (redundant) emphatic marker, as was already mentioned in connection with the COLL reading. As can be seen from the made-up examples in (11), *all* sometimes expresses nothing more than the pure definite article, or, in other words, the definite article already entails the universality of the statement. The quantifier *all* in (11)d, therefore, only serves to emphasise that there was not a single boy who did not leave (provided, of course, that the sentence is interpreted as NEG-V, not as NEG-Q).

(11) a. The boys left.

b. All the boys left.

c. The boys didn't leave.

d. All the boys didn't leave.

Similarly, *all* can (but does not have to)[5] be used as an emphatic marker in negative sentences, which then appear as NEG-V *all…not* constructions, as shown in (11)d as opposed to (11)c. Real NEG-V examples from the BNC, C4 and deWaC illustrating this use of *all* as a (redundant) emphatic marker are given here as sentences (12)a-e.

(12) a. Although there is evidence that those who choose to learn sign language after the age of 30 years will not reach the level of understanding of those who begin earlier; and although there is a declining performance as the age of sign language learning increases, it does not mean that *all* **those over the age of 30 years** can*not* learn BSL, nor that they will be unable to communicate. [CLH:351; NEG-V]

b. "At the end of each sitting I seemed to produce nothing, so I had to hide it (the canvas) and carry it facing me, so *all* **the butlers** would*n't* see it." [G2E:1421; NEG-V]

c. A: My cat scares the dogs.
[…]
A: We've got four local dogs and **they**
B: Lay down!
A: and *all* **the dogs** do*n't* like my cat! [KBL:3456; SPOKEN; NEG-V]

d. Auch wird zuweilen versucht, durch Unterführungen und Lenkungszäune den Zug umzuleiten, oder es werden Ersatzgewässer angelegt. *Alle* **diese Massnahmen** sind aber auch *nicht* gerade "das Gelbe vom Ei": [C4; NEG-V]

e. **Wir** *alle* wollen *nicht* mehr die Last der Schuld und Gewalt tragen müssen. [deWaC; NEG-V]

In the examples in (12), *all* is redundant, so that the quantified NPs in bold print could also stand on their own. The addition of the quantifier *all* merely emphasises that the predicate applies to the totality of the NP, but does not change the propositional content. The possibility of using *all* emphatically was also noted (albeit for slightly different cases) by Zhou (2008: 47), who remarks that in the relevant examples "the quantifier of interest loses its intuitively literal quantificational power". The redundancy of the quantifier is particularly clear in (12)c, where speaker A first uses the plural pronoun *they* to refer to the dogs, but after speaker B's interruption seems to find it necessary to repeat the noun *dogs*, this time with the addition of *all*, thereby stressing that there is not a single dog who likes his/her cat.

[5] Obviously, if (11)d is interpreted as NEG-Q, *all* is not just a redundant emphatic marker. The point here is that it is possible to use it as such in negative sentences as well, and in this latter case negation has narrow scope (NEG-V or COLL).

In addition to the structural and stylistic factors mentioned so far, NEG-V *all…not* constructions can occur for information-structural reasons. For instance, they are sometimes chosen when the focus of negation is on a particular element of the sentence. This focus can be expressed better if the negator *not* (directly) precedes the focused element. Zifonun et al. (1997: 1587) point out that the position of *nicht* is "fokusbestimmt" (determined by focus): "[*N*]*ot* is usually placed directly before the propositional entity that is particularly to be excluded."[6] The focused element is often an adverb or (a part of) the predicate itself. Relevant examples are shown in (13), with the focus of negation highlighted in bold print. Note also that *all* is again more or less redundant in the examples of (13).

(13) a. *All* other exposure variables were *not* **significantly** related to fecundity. [FT0:360; NEG-V]

b. Within the map *all* of these judgments were *not* **only** recorded but also grouped and related, so that the broken and sequential account afforded by conversation was presented in an immediately available visible format. [H83:1780; NEG-V]

c. *All* these forms of learning are *not* learning **that** such and such is the case, but learning **how** to do such and such. [G0R:1251; NEG-V; underlined words appear in italics in the original]

d. Wir *alle* werden in Zukunft *nicht* **gegen** die Technik leben **können**, sondern **mit** ihr leben **müssen**. [C4; NEG-V]

Although a paraphrase with *none*/*kein* is possible for the sentences in (13), the *all…not* constructions are more appropriate here, since negation is focused on particular elements, for example the adverbs *significantly* in (13)a and *only* in (13)b. This focus of negation is expressed more suitably by an *all…not* construction because the negator stands directly next to the focused element, while in the paraphrase with *none*, negation is tied up with the quantifier. The focused element in (13)c is not an adverb but the predicate, or rather part of the predicate. The negated part of the first predicate and the correction in part of the second predicate are highlighted in italics in the original text; the focus of negation and the corresponding correction are thus indicated typographically. Examples (13)b-d are cases with *but/sondern*, which were already mentioned in sections 4.1 and 4.2. Especially in German, these *sondern*-cases seem to be prone to trigger *all…not* constructions rather than

[6] "[*N*]*icht* steht in der Regel adjazent vor der Propositionseinheit, die für den Geltungsausschluß in besonderer Weise 'verantwortlich' ist." (See also Horn's [1989: chapter 7.3.3] Neg First principle and Jespersen [1966 [1917]: 5], mentioned in section 2.4)

their paraphrases. Sentence (13)d is a particularly good example, in which negation is focused not just on the element it directly precedes (here the preposition *gegen*), but also on the modality of the predicate (*können* versus *müssen*). In addition, a paraphrase with *kein* would require a less elegant partitive construction (*keiner von uns*).

To sum up the factors preventing NEG-V paraphrases with *none*/*kein* mentioned so far let us briefly turn to their relative importance in the respective languages, which may be indicated by their frequency of occurrence. In both languages, coordination ranks highest with 15/80 or 19% of NEG-V cases in the BNC involving coordinated structures, 22/91 or 24% in C4 and 34/205 or 17% in deWaC. Secondly, *but*/*sondern*-clauses appear in 9/91 or 10% of NEG-V cases in C4, 33/205 or 16% in deWaC and a bit less frequently in the BNC with 5/80 or 6%. The co-occurrence with personal pronouns (for instance *wir alle*) is found in 7/91 or 8% of NEG-V cases in C4 and 19/205 or 9% in deWaC. This pattern does not exist in English (except for partitive cases like *all of us*, which are not relevant in the present context). These frequencies may appear to be quite low. This is due to the fact that not all factors assumed to be responsible for the use of *all…not* constructions are so easy to quantify and can therefore not be included in the descriptive statistics.

Among the factors triggering NEG-V *all…not* constructions that are hard to quantify are production constraints. As is well known, production constraints are usually much greater for spoken than for written utterances. Consequently, it is conceivable that a speaker who wants to make a universal statement and has little time to plan ahead starts a sentence with the most common universal quantifier *all*.[7] Later in the sentence, the speaker may discover that the predicate of the sentence needs to be negated to express the intended meaning. The result is an *all…not* construction in the NEG-V sense. I have come across a few (Swiss) German instances where this may have been the case. These are presented in (14).

(14) a. Si chömed erscht zu ois, wenn *alles nöd* chlappet hät.
[DRS1, 13-02-2006; NEG-V]
they come not-until to us, when all not worked-out has
'They don't come to us until everything has not worked out.'

b. Also *alle* Kriegsziele wurden *nicht* erreicht. [SWR1, 14-08-2006; NEG-V]

The psycholinguistic literature confirms the view that "language production is *incremental*, meaning that an utterance is typically not fully planned before a speaker begins articulating

[7] According to Biber et al. (1999: 278, Table 4.15), *all* is the most frequent quantifier in all registers.

the first part of it" (Gennari and McDonald 2005/2006: 132). Gennari and McDonald (2005/2006: 157) argue that "factors that affect the choice of particular quantifiers during lexical selection may then constrain the choice to use negation." However, incremental language production can of course also be the reason for the opposite outcome. In that case, the choice of a particular quantifier (here *all*) can also PROMOTE the choice to use negation.

Another interesting point illustrated by the sentences in (14) is that the use of the positive universal quantifier *all* seems to be associated with a stronger existential presupposition than the negative universal quantifier *kein*. In (14)a, it becomes clear that there are things that should have worked out but have not, and in (14)b, it is presupposed that there actually were some goals of war, which, however, were not achieved. If the speaker had used the sentence *Keine Kriegsziele wurden erreicht*, the first part of the sentence could – initially, at least – be understood in the sense that there never were any goals of war. Again, the use of an *all…not* construction thus seems to involve a slight shift in emphasis compared to an unambiguous paraphrase with the same meaning. In such cases, the *all…not* constructions even seem to be the less marked option, contrary to the commonly held view that *no/none* or *kein* paraphrases are the unmarked option.

The idea that the universal quantifier *all* carries a stronger existential presupposition than its negative counterpart is linked to another information-structural explanation. In chapter 4.5 I argued that *all…not* constructions are interpreted in the NEG-V sense if they are characterised by the unmarked predicate-focus structure, in which the subject is the topic and the predicate the focus. Since this focus structure is the unmarked case, it is in fact not surprising that *all…not* constructions are interpreted in the NEG-V sense as long as there are no indications of a different focus structure. As was already mentioned, the constituent functioning as the topic in this unmarked focus structure is usually the subject. However, a constituent can only function as the topic if it has a discourse referent, in other words if it refers to something.[8] This requirement is no problem for the usual quantified NPs functioning as subjects in *all…not* constructions, as their referents are normally "coextensive with the entire class designated by the NP" (Lambrecht 1994: 156). By contrast, the negative universal quantifier *no*/*kein* seems to be a much less likely candidate for

[8] "The requirement that topic expressions designate discourse referents entails that only referring expressions can be topics" (Lambrecht 1994: 156). Similarly, Givón (1978: 89; original emphasis) notes that "[t]he subject of sentences is almost always referential and definite, because it functions to **link** a sentence to the preceding discourse, in the context of which a new assertion is being made. In other words, the subject functions as **topic**". For Ebert and Endriss (2004a: 103), too, "this is the decisive criterion for separating the topical quantifiers from others: while the former allow for the creation of a sensible discourse referent, the latter fail to do so."

fulfilling the role of topic as it does not evoke a discourse referent. ("The restriction against non-referring expressions applies also to so-called 'indefinite pronouns' and other QUANTIFIED expressions, like *nobody*", Lambrecht 1994: 156). The non-referentiality of *no/none* is also mentioned by Givón (1978: 78/79 and 88).

This comparative unsuitability of *no*/*kein* as topic-expression becomes particularly evident in cases where the subject is followed by a relative clause. The function of these relative clauses, as shown in examples (15), is to define their antecedents more clearly and render them as given so that they can serve as topic expressions (this mechanism is called anchoring by Lambrecht 1994: 86; cf. also chapter 4.5 above; givenness or accessibility is another requirement for topics). When the antecedents are quantified NPs, as in the *all…not* constructions in (15)a and b, their closer specification in a relative clause is not a problem. However, if these antecedents are replaced by their negative counterparts, the result is pragmatically odd (cf. (15)a' and b').

(15) a. Da befiel die meisten Forscher der Forscher-Rausch: "Wir glauben nur noch das, was wir gesehen haben. *Alles*, was wir nicht mit eigenen Augen zu beobachten vermögen, existiert *nicht*. …" [C4; NEG-V]

a'. #Nichts, was wir nicht mit eigenen Augen zu beobachten vermögen, existiert.

b. Von *allem*, was darüber hinausgeht, werden bis zu einem Einkommen von 800 Euro 20 Prozent *nicht* angerechnet, bei einem Zuverdienst von bis zu 1.200 Euro bleiben nochmals zehn Prozent anrechnungsfrei. [deWaC; NEG-V]

b'. #/*Von nichts, was darüber hinausgeht, wird bis zu einem Einkommen von 800 Euro 20 Prozent angerechnet,…

While (15)a' is more difficult to understand than (15)a, but still intelligible, (15)b' is incomprehensible, if not ungrammatical.

The rule that negative universal quantifiers usually are not suitable as topic expressions naturally also applies to sentences without anchoring relative clauses. This is evident from the following example (16), uttered by a fellow linguist with regard to certain corpora.

(16) *Alles* ist *nicht* einheitlich. [L.Z., 13-01-2011; NEG-V]

When I asked my colleague, she stated that she would not have said *Nichts ist einheitlich* because there is so much material and she wanted to say something ABOUT all this

material. The universal quantifier *alles*, in contrast to its negative version *nichts*, emphasises the size of the corpus material, as well as its existence. In the context of the utterance, *alles* clearly referred to the corpus material about which my colleague wanted to say something, so she felt that it was a more suitable topic expression than its negative counterpart.

The most striking example that plays on the unsuitability of *nichts/kein* as topic expression is shown in (17), quoted from Weiß (1961b: 136).

(17) Keinen Gedanken haben und ihn ausdrücken können – das macht den
no thought to have and it to express be able that makes the
Journalisten. [Karl Kraus]
journalist
'To have no idea and be able to express it – that is what makes the journalist.'

This definition of a journalist is only witty because of the clash between the non-referring expression *keinen Gedanken* in the first part and using the co-referential *ihn* as topic-expression in the second part, as if *ihn/kein Gedanke* were an existing discouse referent about which something can be predicated.[9] Weiß (1961a: 69) explains the comic effect as follows:

> The focus of negation, the direct object, seems to set itself off from the verb together with it [i.e. negation]. *No idea* then receives the positive pro-form *it* and thereby is marked even more clearly as an exponent of the class of things one can have: *no idea* like *a good idea*.[10]

In this use of the negative universal quantifier *kein*, Weiß (1961b: 131) sees a general tendency of German to use synthetic negation rather than nexal *not*:

> The tendency for a coherent connection [i.e. negative attraction/synthetic negation …] is only a part of the more general tendendy of modern German to consign special negations, particularly the quantity-based ones: *no*, *no one*, *nobody*, *nothing*, to the function of sentence negation.[11]

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[9] The possibility of interpreting quantificational items like *kein* or *nothing* as referential, for instance as a proper name, has of course often been exploited in literature, the most famous instance probably being the story of how Odysseus tricked Polyphemus in Homer's *Odyssey*. Another example from Lewis Carroll's *Through the Looking-Glass* is cited by Taglicht (1984: 111), given here as (i):

(i) 'I see nobody on the road,' said Alice.
'I only wish I had such eyes,' the King remarked in a fretful tone. 'To be able to see Nobody! And at that distance too!

[10] The original: "Der Angriffspunkt der Negation, der Objektsakkusativ, setzt sich mit ihr zusammen scheinbar vom Verb ab. *Kein Gedanke* erhält dann den positiven Größenvertreter *ihn* und wird dadurch noch nachdrücklicher zum Vertreter einer Klasse von Wesen gestempelt, die man haben kann: *kein Gedanke* wie *ein guter Gedanke*."

[11] "Die Tendenz zur kohärenten Verbindung […] ist nur eine Teilerscheinung der allgemeineren Tendenz des heutigen Deutschen, die dahingeht, Sondernegationen, vor allem die größenbezogenen: *kein, keiner, niemand, nichts*, mit der Aufgabe der Satznegation zu betrauen."
Similarly, Quirk et al. (1985: 790) claim that NEG-V *all…not* constructions are "unusual; more common is the paraphrase with a negative subject".

Weiß gives evidence for this tendency of German in a comparison to the Romance languages. He compared negations with *kein* to their corresponding structures in French and Italian, looking at German translations of French and Italian texts as well as at French and Italian translations of German texts. According to Weiß (1961b: 129), the majority of the German *kein* negations correspond to nexal *not* in French and Italian. Unfortunately, the position of English in this respect is unclear. Moreover, Weiß does not say anything about the function of the *kein*-constituent, in particular how often *kein* occurs in subject position in his material. It is therefore difficult to say whether we should be surprised to find comparatively many *all…not* constructions, especially NEG-V ones, in German (in contrast to English). If the tendency noted by Weiß also applies to the subject position, one might assume that NEG-V *all…not* constructions would be particularly rare in German because they would tend to be expressed by synthetic *kein*.

Moreover, Weiß does not acknowledge the fact that *kein* can correspond to negated *all*; rather, he sees *kein* only as a variant of the negated (in)definite article.[12] This becomes clear in another example he quotes from a novella by Friedrich Georg Jünger, given here as (18)a, where he paraphrases the *kein*-constituents with nexal *not* and the definite article or no article ((18)b). However, in principle, a paraphrase with the quantifier *all* is also possible, as shown in (18)c.

(18) a. Im Dorf regt sich nichts mehr; kein Wagen knarrt, keine Kuh brüllt, kein Hahn kräht …
b. die Wagen knarren nicht, Kühe brüllen nicht, Hähne krähen nicht
c. alle Wagen knarren nicht, alle Kühe brüllen nicht, alle Hähne krähen nicht

Weiß (1961b: 136) prefers the original version shown in (18)a because he thinks that the "strangely negative image" conveyed by (18)a is lost in (18)b. Weiß is right that (18)a is the best version of the three in the particular context: a scene-setting sentence in a novella. As such, (18)a is a prime example of thetic constructions, which contain no topic.[13] After all, the point of the sentence is not to say something ABOUT carts, cows or cocks; it is not even necessarily the case that there are any cows in the village. Rather, the point is to characterise the whole situational context. In such thetic sentences, with only implicit stage-topics, *kein* seems to work fine; as long as they do not function as topics, the non-speci-

[12] Similarly, the literature on English *no* and *none* usually assumes an underlying *not any* (Labov 1972b, 1975; Klima 1964: 274).
[13] For an explanation of the term thetic, cf. chapter 4.5, footnote 24.

ficity and thus unidentifiability of the subjects is not a problem.[14] If, however, the intention is to talk ABOUT the carts, cows and cocks – in other words if the latter are supposed to function as topics – then the versions shown in (18)b and (18)c are much more acceptable than (18)a. This is also the reason why (15)a' and b' above are strange; in (15)a and b, something is said about the topics, that is a negative statement is made about a positive topic and the respective topic expressions have identifiable discourse-referents. In (15)a' and b', by contrast, the attempt to make a positive statement about *nothing* is pragmatically odd.

To conclude, I assume that NEG-V *all…not* constructions are in fact unmarked cases, in that they are characterised by unmarked predicate-focus with unmarked topic expressions (quantified subject NPs). As such, they have no need of further explanation. As regards Weiß' postulated tendency of German (and maybe English) to use synthetic negation instead of nexal *not* to express sentence negation, a study differentiating the syntactic functions of the *kein* constituents would probably yield interesting results. I suspect that this tendency, if it turns out to be correct, applies to object constituents, rather than to subjects, which are unmarked topics. It would be surprising if this tendency were correct for subject constituents, as subject expressions with *no/kein* tend to be unsuitable as topics. Weiß (1961b: 136) refers to the intended sentence negation with *kein* NP as "a paradoxical positive negative".[15] In a Sapir-Whorfian move, he even speculates on the emergence of a metaphysical "*Nichts*" from several linguistic factors (Weiß 1961b: 137) and the possible connection to German philosophers' inclination to think about this *Nichts* (Weiß 1961b: 139). In order to shed more light on these issues, it would be interesting to investigate the frequency of English and German sentences with *no/kein*, or to compare their ratios of *no*-negation to *not*-negation (cf. Tottie 1991 for English). As far as (NEG-V) *all…not* constructions are concerned, it would be particularly interesting to look at the information-structural function of *no/kein* NPs in subject position in order to ascertain whether these can be used as topics, or whether they usually occur in thetic sentences, as I would assume.[16] Unfortunately, this goes well beyond the scope of the present study.

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[14] In English, such a scene-setting description would maybe more likely be expressed by an existential *there*-construction (*There were no carts creaking…*). Givón (1978: 88) notes that "the NP-negation pattern [as in *No one loves Mary*]", i.e. a construction with *no* NP, *no one* etc. in subject position, "is a rarer phenomenon in languages [than negation on the verb as in *Someone doesn't love Mary*], and […] is in some sense a more marked, less likely negation pattern, perhaps ultimately arising from a much more prevalent negative-existential construction".

[15] "Da ist die gemeinte Satznegation […] zu einem paradoxen positiven Negativum geworden."

[16] It is difficult to search for the relevant *no/none* paraphrases in a corpus. Restricting the search merely to sentence-initial constituents of the form *no* NP results in many unwanted hits like *No problem* [A56:53]. Even if the search is further restricted to sentences containing a verb, there are still many irrelevant cases, such as *No wonder we fear them* [A05:992]. However, a rough perusal of the hits seems to confirm the impression that sentence-initial *no* NP is usually non-specific or even non-referential, as, for instance, in

5.3 The NEG-Q sense

Let us now turn from the reasons for and functions of NEG-V *all…not* constructions to NEG-Q *all…not* constructions. It could be argued that NEG-Q *all…not* constructions are most in need of explanation for the following reasons. First of all, the NEG-Q reading can be said to be the most 'illogical' one as it involves scope inversion, that is scope is not determined by linear order. Secondly, in information-structural terms, contrastive NEG-Q readings deviate from the unmarked predicate-focus structure that is typical of NEG-V readings. Finally, the available unmarked paraphrase *not all/nicht alle* does not seem to present the problem of missing discourse referents/existential presuppositions we encountered for the NEG-V paraphrase *no/kein*, so the reason why the NEG-Q paraphrase should be avoided is far from evident.

To start with the latter argument, it would indeed seem reasonable to expect the majority of NEG-Q meanings to be expressed by *not all/nicht alle* structures in both languages. This expectation would tally well with Jespersen's Neg First principle, the "natural tendency, […] for the sake of clearness, to place the negative first, or at any rate as soon as possible, very often immediately before the particular word to be negatived [sic]" (Jespersen 1966 [1917]: 5). In order to give an indication that this expectation is accurate, I searched the BNC for *not all* occurring at the beginning of an s-unit, and C4 for *Nicht ALLE*.[17] The restriction to sentence-initial position was supposed to ensure that no cases were included that could not be paraphrased as *all…not* constructions (such as *That was not all I learnt that day* [A0U:2053]). Obviously, this restriction excludes a lot of cases that could be paraphrased with an *all…not* construction, even if *not all* is not sentence-initial (for instance, *Recent research has shown that not all joint-ventures or alliances between Western and Japanese companies are a complete success* [A26:305]). Bearing this in mind, sentence-initial *not all* occurs 736 times or 7.5 times pmw in the BNC, and *Nicht ALLE* in C4 is even more frequent with 211 hits or 19 instances pmw. The *not all* construction is thus distinctly more frequent than NEG-Q *all…not* constructions, which have a frequency of 2.6 instances pmw in the BNC and only 1.53 instances pmw in C4. Even

No reply was received but the group later heard that Bashir had been released [A03:648]. To exclude the possibility of non-specificity, an alternative paraphrase is *none of* NP, as in the constructed alternative for the NEG-V reading *None of the boys left*. The *none of* paraphrase seems to be a better alternative for *all…not* constructions; the sentence-initial hits in the BNC can generally be paraphrased with *all…not* constructions, although the latter are often less suitable in the particular context (for example in terms of information packaging). The *none of* paraphrase, however, turns out to be very rare, with only 18 sentence-initial hits (0.18 instances pmw) in the BNC.

[17] Unfortunately, C4 does not offer the possibility of searching for sentence-initial position, so I had to search for upper-case *Nicht* as an approximation.

with such a restrictive search, *not all* thus occurs almost three times as often as NEG-Q *all…not* in the BNC and even twelve times as often in C4. The actual frequencies of *not all/nicht alle* cases that could be paraphrased as *all…not* constructions is of course much higher (somewhere between 7.5 and 35 pmw in the BNC and between 19 and 55 pmw in C4).[18] So it is clearly true that the *not all* construction is the unmarked way of expressing NEG-Q senses. This seems to be particularly true for German, where the ratio of *not all* to NEG-Q *all…not* is much higher than in English.

However, despite – or rather because of – the fact that *not all* is the unmarked alternative to NEG-Q *all…not* constructions, it is clear that the latter serve specialised communicative functions. Chapters 4.5 to 4.9 showed what these special functions consist of. First of all, the contrastive NEG-Q cases, that is those with contrastive focus on the quantifier, are particularly emphatic. Somewhat paradoxically, the negation of the quantifier appears to be stronger or more emphatic when the negator stays in its unmarked position next to the finite verb and the quantifier is placed right at the beginning, which is the most prominent position in the sentence. Weiß (1961a: 71) calls this structure "Negationsklammer":

> It is a matter of combination, frequently found in German, of sentence negation and constituent negation, which I want to call negative brace. The constituent particularly affected by negation is usually placed in the 'position of expression', but is at least intonationally emphasised. Negation appears at the end of the sentence, encircled by both the inflected verb form and the emphasised constituent.[19]

Weiß considers this structure to be typical of German, although my results indicate that it is not uncommon in English either (cf. chapter 3.4). The emphatic nature of NEG-Q *all…not* constructions has also been noted by other authors, for instance Jespersen (1966 [1917]: 87: "very often *all* is placed first for the sake of emphasis").[20] The "Negationsklammer" is

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[18] The upper bound is the overall frequency of *not all/nicht alle* in the two corpora (cf. chapter 4.9).

[19] Original: "Es handelt sich dabei um eine im Deutschen häufige Verbindung von Satznegation und Sondernegation, die ich Negationsklammer nennen möchte. Das von der Negation besonders getroffene Glied steht dabei meistens in der "Ausdrucksstelle", wird aber zumindest durch die Intonation hervorgehoben. Die Negation steht am Satzende, sowohl mit der Personalform des Verbs wie mit dem hervorgehobenen Glied verklammert:"

[20] What Weiß calls Negationsklammer is referred to as "Fokusaufspaltung" by Zifonun et al. (1997: 1574): "A different kind of focus-shifting is the case when an entity is taken out of the grammatically determined scope of negation and preposed." ("Ein anderer Fall von Fokusverschiebung liegt vor, wenn eine Einheit aus dem grammatisch determinierten Wirkungsbereich der Negation herausgenommen und vorangestellt wird.") However, it seems they use this term only for cases where (a part of) the predicate is fronted: "The negative expression remains in its regular position at the right edge of the middle field; a part of the predicate expression is displaced to the left beyond *not* – in extreme cases to the very beginning of the middle field – and receives a pitch accent of its own" (Zifonun et al. 1997: 1575; original: "Der Negationsausdruck bleibt hier auf seiner regulären Position am rechten Mittelfeldrand; ein Teil des Prädikatsausdrucks […] wird über *nicht* hinweg nach links verlagert – im Extremfall ganz an den Anfang des Mittelfelds […] – und erhält einen eigenen Gipfelakzent").

thus a means of special emphasis that combines contrastive focus on the element in sentence-initial position, which is a favoured position in sentences for both topic and focus, with sentence-negation, which is most usually expressed by predicate negation. The importance of a fronted position is also emphasised by Givón (1984: 737; italics in the original) in his pre-posed order principle: "The less *predictable* – or the more *important* – the information is, the more likely it is to be placed earlier in the clause (or in whatever relevant unit of structured information)".

Apart from the extra emphasis that the quantifier *all* receives in clause-initial position, this word-order can also contribute to the coherent progression of the text. This is shown in examples (19), where *all* takes up something from the preceding context.

(19) a. A "landmine" destroyed one vehicle, a patrol was ambushed as they spoke to some locals, and a foreign parachute and map were discovered on a beach after a tip-off. *All* did *not* go against the Key Company, however; prisoners were taken at some of the incidents, some carrying vital information. [A77:1864; NEG-Q]

b. It is possible for an aircraft to have several different modes of spinning, and *all* of them may *not* have been discovered during the testing. [A0H:922; NEG-Q]

c. "Und Ihren Klienten informieren. Er und Isabelle könnten in Gefahr sein." "Das glaube ich nicht. Wir wissen mittlerweile mehr als die beiden. Und *alle*, die etwas wissen, kann Jorno *nicht* umbringen." [C4; NEG-Q]

In example (19)a, *all* creates a thematic link to the disasters that were mentioned in the preceding sentence. Similarly, in (19)b *all* refers back to the modes of spinning, while the negator is part of the new information, which is usually placed towards the end of the sentence. In example (19)c, the preceding sentence already mentions people who know something. The link to the next sentence is created by the hypernym *all who know something*. This topic expression is then followed by the new information that Jorno cannot kill (them all). The corresponding *not all* paraphrase with canonical German word order would be *Jorno kann nicht alle umbringen, die etwas wissen* or *Jorno kann nicht alle, die etwas wissen, umbringen*. These *not all* paraphrases have the undesired effect that the subject *Jorno* is interpreted as the topic about which something new is predicated. But this does not make sense in the present context: the referent of *Jorno* is not accessible, which makes it an unlikely subject, and the point of the sentence is not to say anything about Jorno, but rather about the people who know something.

As I argued in chapter 4.6, the second type of NEG-Q *all…not* constructions involve metalinguistic or external negation. Metalinguistic negation always involves the negation of an explicitly or implicitly echoic structure. Explicit echo can serve as a rhetorical device. This rhetorical device is exploited almost ad nauseam in a sermon included in the BNC, an extract of which is shown in (20). Through the insistent repetition of the two parallel structures, the positive *all may be saved* and its echoic denial *all will not be saved*, the message of this sermon is surely communicated in a very memorable way.

(20) the invitation is to all, so it's quite clear that all may be saved, but it's equally clear, a second proposition that *all* will *not* be saved. […] this surely what Jesus says here makes it very clear that *all* will *not* be saved […] again there is no answer to that question, simply because the answer is so horrific, it doesn't bear thinking about, but thank God all may be safe, *all* will *not* be safe, but all may be safe, God has provided a salvation that is available to all and if we are not safe it is because we choose to reject his s, his offers of mercy, so we thank God that all may be safe, but the solemn fact remains is that *all* will *not* be saved, well that leads us on to, to this third proposition, not only that the bible teach that all may be saved, not only does it teach that *all* will *not* be saved, but it is quite clear that some will be saved whom we did not expect to be saved, […]. [KN7:7-11; SPOKEN; NEG-Q]

At least in English, the prototypical way of negating sentences (metalinguistically or otherwise) is by "inserting the clause negator *not* between the operator [i.e. the auxiliary verb] and the predication" and in case there is no operator in the positive sentence, "the dummy (or substitute) auxiliary DO is introduced" (Quirk et al. 1985: 776). This kind of negation on the verb can be added to any positive sentence, including sentences that are used echoically, as the canonical examples of metalinguistic negation show: *The king of France is bald → The king of France is not bald, John managed to solve some problems → John didn't manage to solve some problems*. Of course, the same is also true for sentences involving a quantified subject: *All the boys left → All the boys didn't leave*. Placing the negator directly in front of the quantifier, as in the *not all* paraphrase, results in a NEG-Q reading, but since this type of negation cannot be applied to all kinds of echoic structures (*#Not the King of France is bald*, *#Not John managed to solve some problems*), it is not a general option for marking metalinguistic negation. In English, sentences with quantified subjects that are negated echoically thus tend to result in *all…not* constructions. In German, by contrast, it is not clear that negation on the verb is the preferred way of expressing metalinguistic negation. The corpus data show that metalinguistic *all…not* constructions seem to be only marginal in German, although some cases of echoic denial

can be found (cf. examples (54)a and b in chapter 4.9). In chapter 4.9, I speculated that this kind of echoic denial may be more frequent in German speech, where interlocutors are more likely to echo an utterance they want to deny. Moreover, I also argued that the German impersonal construction offers a way of negating externally that is not (or only marginally) available in English, and so may explain the (comparatively) low frequency of NEG-Q *all…not* constructions in German (writing).

Finally, the formulaic expressions represent a third, and large, category of NEG-Q *all…not* constructions in English. The NEG-Q sense of these expressions is probably part of their formulaic nature and accessed directly, rather than being derived by a process of interpretation. However, these expressions seem to me to be more similar to the meta-linguistic than to the contrastive cases. First of all, their positive counterparts, that is the original structures they negate echoically, exist in the form of *all is lost* (→ *all is not lost*) and *all is well* (→ *all is not well*). Moreover, many of them are emphatic denials, a feature that is also typical of many of the non-formulaic metalinguistic cases. However, there is an interesting difference between the *all is not lost*-type and the *all is not well*-type of the formulaic NEG-Q cases. The majority of the *all is not lost*-type cases conforms to the expectation that they function as emphatic denials (about 80%). The *all is not well*-type, by contrast, occurs in statements expressing that things are not as they should be, but this state of affairs is often already anticipated in the preceding context, so that these instances do not involve a violation of previously created expectations (cf. example (21)a). The same can be said of the less frequent *all is not as it seems*-type. Thus it is mainly the formulaic NEG-Q instances containing negatively connoted words like *lost* or *gloom and doom* (which is itself part of a formulaic expression) that deny previously established expectations, while those containing positively connoted words like *well* or *sweetness and light* function as further confirmation of already known facts. Typical examples are shown in (21).

(21) a. The shops were shut without warning two days ago. All are in New York. Sock Shop admitted earlier this year that *all* was *not* well with its American outlets. [AAS:376; NEG-Q]

b. Hidden agendas, precisely because they are under cover, are often difficult to detect. It usually dawns on you slowly that *all* is *not* as it would appear on the surface. [B2F:320; NEG-Q]

c. A good painting day, and you find your paint in the shed, but, oh dear, you've forgotten to clean the paint brushes again. The turps in the jar has congealed to a semi-solid jelly around the brushes. Sound familiar? Well *all* is *not* lost. [AM5:1102; NEG-Q]

d. I think that any knitter who overcomes all these problems is likely to be keen, after all it is enough to deter many of us. *All* is *not* gloom and doom, however, because of the Machine Knitting Association. [CGX:358; NEG-Q]

In examples (21)a and b, what is expressed in the *all…not* constructions is nothing surprising. In (21)a, the fact that the shops were closed without warning already suggests that all is not well. Since the text in (21)b deals with hidden agendas, the reader can gather that all is not as it appears on the surface. In (21)c and d, by contrast, expectations are first raised and then violated; the implicit propositions are denied. In (21)c, the reader may think that nothing can be done if s/he has forgotten to clean the brushes, but this turns out to be wrong. The context in (21)d talks of *all these problems* so that the reader judges the situation to be rather discouraging. But then the writer denies the assumption that there is no hope, strengthening the contrast to the expectations raised earlier with the contrastive conjunct *however* (*all is not gloom and doom, however*). On the basis of these observations, it seems that formulaic *all…not* constructions are typically used in unpleasant contexts. Thus, if a positive-connotation word like *well* is denied, the unpleasantness of the situation is further emphasised. If, conversely, the negated sentence contains a negative-connotation word like *lost*, then the *all…not* construction functions as an emphatic denial of an assumption created previously that the entire situation is unpleasant.

5.4 Concluding remarks

Although the reasons for the choice of *all…not* constructions cannot be determined conclusively, I have put forward some explanations as to why they are sometimes preferred to their unmarked paraphrases, and listed the typical funtions of the three different readings. While the reasons for the use of *all…not* constructions are an interesting issue to speculate on, I would like to point out that the question can be asked on the basis of a flawed assumption. This assumption is that natural language avoids ambiguous structures, probably because they might confuse addressees, and that therefore the existence of such (potentially) ambiguous structures has to be explained. However, I would argue that this assumption is not true. On the one hand, ambiguities of all kinds abound in natural language, so their existence should come as no surprise. On the other hand, these ambiguities normally pose no difficulties at all, except maybe for the inquisitive linguist. It must be stressed that it was not this assumption that led me to consider the functions of *all…not* constructions.

Rather than being puzzled by ambiguity, I became interested in the functions of *all…not* constructions because synonymous alternatives are not only readily available, but even claimed to be unmarked. The existence of a variety of different structures to express meanings that are similar or, at first sight, even synonymous, allows speakers and writers to express themselves more appropriately in different contexts. And indeed, this section has revealed that alternative structures with the same propositional content serve to make subtle semantic and pragmatic distinctions, to organise discourse in a coherent manner, to signal information-structural categories such as given and new, and to emphasise statements in rhetorically effective ways.

6 Summary and conclusion

6.1 Quantifier-negation interaction

This study has been concerned with *all…not* constructions, such as shown in (1)a, repeated below for convenience. Constructions of this kind are potentially ambiguous, depending on whether negation has wide or narrow scope, and on whether *all* is interpreted in the distributive or in the collective sense. Paraphrases of the possible readings are shown in (1)b-d.

(1) a. All the bills don't amount to $50.
b. Not all the bills amount to $50. NEG-Q wide scope neg.
c. Not one of the bills amounts to $50. NEG-V narrow scope neg.
d. The sum of all the bills does not amount to $50. COLL collective

From the perspective of traditional logic (and hence prescriptive grammar), only the NEG-V reading should be available, since the quantifier *all* must have wide scope (scope according to linear order). Traditionally, quantifier-negation constructions have mainly been studied by logicians and semanticists.

6.2 Corpus linguistic material

In contrast to previous studies, I chose an empirical approach and looked at the *all…not* construction with the help of corpora of real, mostly written language: The British National Corpus (BNC) for English, and for German Korpus C4 and the German component (deWaC) of the web-crawled corpora compiled by WaCky. Such an empirical study creates its own difficulties. When using an electronic corpus, the first problem is the extraction of the sentences in question. Finding restrictions to narrow down the output and receive more precise results is difficult, which means only a small proportion of the extracted sentences will be relevant. Moreover, it is vital to use a sufficiently large corpus, since the constructions in question are very rare. In the 100 million word BNC, I found 490 instances of *all…not* constructions (5 instances per million words); 43 instances from speech in roughly 10 million words (4 instances pmw) and 447 instances from written language in roughly 90 million words (5 instances pmw). The construction is somewhat less infrequent in German writing: I found 159 relevant instances in C4 (14 pmw), which were complemented by 367 instances from deWaC (estimated frequency of 12 pmw).

6.3 Analysis of the corpus data and importance of context

The analysis of the constructions in question is even more challenging than their extraction. In section 3.3.2, I touched upon problematic cases that pose special difficulties for the analysis. The problems in interpreting the meaning of particular instances could, however, be greatly reduced by taking into consideration the surrounding context. This is an important methodological difference to all previous work on this topic, which has never examined the influence of the context systematically, and in most cases has looked only at made-up sentences, which do not reflect the true diversity of the use of *all…not* constructions. In this sense, the present study contributes to the understanding of the pragmatic dimensions of these constructions. Thanks to this emphasis on pragmatics I was able to show that CONTEXT, if understood in a very broad sense to include not only the linguistic and situational context, but also specialist and world knowledge, is the key to the disambiguation of *all…not* constructions. Consideration of the context also enabled a description of the ways in which information structure and metalinguistic negation (here broadly defined as echoic use) play a role in disambiguation.

6.4 Quantitative results

In addition to the importance of pragmatic factors, this study reveals the frequency of the different readings of *all…not* constructions. In accordance with previous studies (for instance Carden 1970a, 1973a, 1973b, 1976; Heringer 1970; Stokes 1974; Labov 1972a; Taglicht ND), in English the NEG-Q reading turned out to be the most frequent one (with over 50% of all instances; cf. Table 7 in section 3.4.3, repeated here for convenience as Table 23), while the NEG-V reading makes up only 17% of all instances. Although the COLL instances are more frequent (29% of my data), they have not been studied in any publication before.

Table 23. Distributions of readings in BNC, C4 and deWaC

	NEG-Q		NEG-V		COLL		Total	
	n	%	n	%	n	%	n	%
BNC	255	54%	80	17%	134	29%	469	100%
C4	17	11%	91	58%	48	31%	156	100%
deWaC	34	9%	205	56%	124	34%	363	100%

Less than 5% of the BNC instances are UNCL (23 cases); this is mostly due to real ambiguity (at least in the available context) and to anacolutha (especially in speech). Three cases were opaque and could not be interpreted without specialist knowledge.

In the German datasets there were even fewer UNCL cases (less than 2%). The distribution of the three readings is different in German: the NEG-Q reading accounts for only around 10% of all instances, whereas the 'logical' NEG-V reading is the most frequent category (with a bit less than 60%), followed by the COLL sense (with more than 30%). While the frequencies in the two German datasets are very similar, a chi-square test shows that the differences between the English and German results are highly significant.

6.5 Differences between English and German

I have tentatively suggested various explanations for these differences. The fact that *all…not* constructions occur more often in German than in English can at least in part be attributed to the freer word order of German. Whereas in English, the preverbal position of the quantified NP can only be filled by subjects, in German other functional elements, such as direct objects, can occur in this position as well. However, this explanation is probably counteracted by word order restrictions applying to certain German subclauses in which the finite verb must occur clause-finally (for example, *I know that all is not well* would be translated into German as *Ich weiss dass nicht alles/alles nicht gut ist*). As such structures are not ambiguous, they were excluded from the dataset. Another reason for the higher frequency of *all…not* constructions in German could be that German favours the quantifier *alle* over other universal quantifiers to an even greater extent than English favours *all*. Possibly the figures would be comparable in a study including all types of universal quantifiers, such as *every*, *each* and *jede/r/s*.

6.6 Formulaic expressions

Another major difference between English and German was discovered in the existence of English formulaic *all…not* constructions (such as *all is not lost* or *all* NP *in the world* V *not*). While these formulaic expressions account for a high proportion of the English data, no clearly formulaic expressions could be found in the German data. In English, formulaic expressions make up the majority of the NEG-Q instances (56%), as well as many of the COLL instances (26%), while there are no formulaic NEG-V *all…not* constructions. The types of meaning that are expressed by these formulaic constructions can also be expressed

by the non-formulaic NEG-Q and COLL instances, respectively (e.g. the formulaic constructions with *in the world* express the *not even all* sense that is also frequent in other, non-formulaic COLL instances; cf. section 3.4.4 and chapter 5). The formulaic nature of certain *all…not* constructions has not been addressed previously. This neglect can be attributed to the (more or less) exclusive use of constructed examples in earlier studies.

6.7 Speech versus writing

In this study, I also looked at differences in the frequencies of the three readings, as well as the formulaic and non-formulaic expressions, in speech and writing. Surprisingly, it turns out that in English the construction is almost as frequent in speech as in writing. The NEG-Q reading, and also the COLL reading, is less frequent in speech than in writing, while the NEG-V reading is more frequent in speech than in writing. Although the NEG-Q reading is still the most frequent one in speech (as well as in writing), the difference between the frequencies of NEG-Q and NEG-V readings is much less pronounced in spoken English than in writing. Another surprise concerning spoken *all…not* constructions is that there are hardly any spoken formulaic instances. It seems, in other words, that the formulaic NEG-Q and COLL expressions are more typical of writing than of speech. However, it must be borne in mind that the results concerning speech have to be interpreted with caution, since I found no more than 43 instances in the small spoken part of the BNC and for various reasons a high proportion of these were UNCL (10 cases or 23% of the spoken instances; cf. section 3.4.6).

Unfortunately, the lack of sufficiently large German spoken corpora prevented a quantitative investigation of *all…not* constructions in German speech. However, my own collection of examples includes more German spoken *all…not* constructions than the total of spoken English examples that could be extracted from the BNC. Although this 'informal' collection cannot yield reliable quantitative information, there are strong indications that in contrast to English, in German the NEG-Q reading may be more frequent in speech than in writing. This claim finds support in the C4 data, where 41% of NEG-Q cases occur in 'represented speech' (for example fictional dialogues). Assuming the hypothesis that German NEG-Q cases are more characteristic of speech is corroborated, then the reason for this could be that in German the NEG-Q cases typically occur as self or other repairs, with strong contrast on the quantifier.

6.8 Disambiguation

6.8.1 Lexical/semantic factors

One of the major aims of this study was not only the (quantitative) description of the constructions in question, but also an attempt at uncovering which factors lead to disambiguation. The emerging picture is quite complex, with contributing factors located on all linguistic levels: (a) lexical/semantic, (b) structural and (c) pragmatic (chapter 4). Lexical factors include collective predicates like *add up* or *ausreichen* leading to COLL readings and modifiers like *equally* or *same* inducing NEG-Q readings. NEG-V readings are triggered by modification of the quantified NP with *other* and *ander*, respectively, as well as when the domain of the quantifier is constrained by *almost* or *fast*.

6.8.2 Structural factors

The structural correlations with NEG-V readings include *but/sondern*-clauses, coordination in the subject (containing the quantified NP) or in the predicate, and the occurrence of more than one quantifier. Anaphoric *all this/all das* has wide scope over negation and is typically COLL. A major and unexpected factor was found in the status of *all* as either pronoun or predeterminer and the complexity of the quantified NP. Moreover, these factors interact with formulaicity in interesting ways. The likelihood for a NEQ-Q reading is inversely proportional to the complexity of the quantified NP. The majority of NEG-Q cases occur with bare *all*, and NEG-Q frequencies diminish the more complex the quantified NPs get. The vast majority of NEG-Q cases with pronominal bare *all* are formulaic. Interestingly, the same correlation between NEG-Q readings and the status of *all* as well as the complexity of the quantified NP can be observed in the German data, despite the lack of German formulaic expressions. In addition, the low frequencies of NEG-V and COLL readings occurring with bare *all* are also common to both languages.

6.8.3 Pragmatic factors

Pragmatic factors also play an important role in the disambiguation of *all…not* constructions. With the help of authentic examples in their original context I was able to show that, apart from the lexical and structural factors mentioned above, world and specialist knowledge can be decisive (this is illustrated nicely in Baltin's (1974: 32) constructed examples *All men aren't 20 feet tall* and *All men aren't 6 feet tall* (presented as

(18) in chapter 2.6), which, according to world knowledge, must be NEG-V and NEG-Q, respectively). The fact that structurally identical sentences can lead to different interpretations in varying contexts has important theoretical implications and suggests strongly that in a successful model for natural language semantics cannot be sealed off from pragmatics. Moreover, I argued that different information-structural constellations lead to different readings (chapter 4.5). Unmarked focus structure, with the (quantified) subject functioning as the topic about which something is predicated, typically leads to NEG-V interpretations. By contrast, an information structure with contrastive focus on the quantifier *all* leads to NEG-Q readings in both languages. For English, it turned out that this information-structural explanation was not enough to account for all NEG-Q instances. The remainder of the English NEG-Q instances were interpreted as involving metalinguistic negation (chapter 4.6), as in example (42)a in chapter 4.6 (repeated here for convenience as (2)).

(2) Until recently it had always been assumed that all calories are the same, regardless of where they came from. […] However, recent research has confirmed that *all* calories are *not* the same. [BPG:561; NEG-Q]

In these metalinguistic cases, the material falling in the scope of negation is explicitly or implicitly echoic. Semantically, the result is external negation, i.e. negation that functions like the logical negation operator on whole propositions (which can be paraphrased with *It is not the case that*). While some scholars doubt that natural language negation can operate on whole propositions, I argue that metalinguistic negation is an important device with particular stylistic and rhetorical effects. In English, metalinguistic negation is typically expressed by what looks like nexal *not* (cf. also the relevant literature mentioned in chapter 4.6). As I found hardly any metalinguistic NEG-Q cases in the German data, it seems that metalinguistic negation may be expressed by other means in German. A likely candidate for this function is the impersonal construction *es ist nicht* (discussed in section 4.9).

Based on the above observations, it may seem possible to predict the interpretation of particular sentences based on their structure, the presence of certain lexical items or the status of *all* etc. Such rule-based automatic predictions, which would be useful for NPL applications for instance, might be quite accurate as long as such clear linguistic clues are present, while results may become less accurate in those cases where there is only a probabilistic correlation between certain features and a particular reading, and even more

so where disambiguation depends on less specific contextual clues or on specialist and world knowledge, which is still difficult to model.

6.9 Reasons for the use of *all…not* constructions

Another important issue addressed in this thesis, but neglected in the previous literature, is the question of why these unusual and rare constructions are used in the first place. Since this question cannot be dealt with in a purely empirical manner by relying on corpus material, the reasons for the use of *all…not* constructions must remain more or less hypothetical. I have tried, however, to support my speculations by discussing a number of instances from my corpus material as well as from my own collection of *all…not* sentences. Based on a detailed qualitative analysis of the data, I was able to uncover the most typical uses of *all…not* constructions in the different senses. I considered structural, stylistic and rhetorical reasons that lead to the use of *all…not* constructions, as well as what could again be termed information-structural factors (the non-referentiality of the negative universal quantifiers *no/kein* and consequently their unsuitability as topic expressions). A further reason for the use of spoken *all…not* constructions may be found in the incremental online production of utterances. As far as contrastive NEG-Q cases are concerned, the *all…not* structure is particularly emphatic, a feature that has already been noted by previous scholars (for instance Jespersen).

6.10 Avenues for future research

Although I have tried to present a comprehensive picture of the topic by addressing many different aspects of *all…not* constructions, a number of questions remain open and various issues invite future research. In particular, in the context of this study I only looked at the quantifier *all* in preverbal position. It would be interesting to perform similar studies with other universal quantifiers to uncover their similarities and differences and to include cases with quantifiers in oblique functions. A further step would be the investigation of similar constructions with other (e.g. existential) quantifiers like *some* or *many*. Such studies would probably also shed some light on the disappearance of ambiguity when *all* is replaced by *some*. Finally, the comparative approach on the interaction of quantifiers and negation could be extended to languages other than English and German. It appears that not many languages have been studied in this respect, and there seems to be disagreement regarding the existence of such constructions and the question of ambiguity in certain

languages (cf. section 2.9). De Haan (1997: 176) claims, for instance, that the NEG-Q reading of such constructions does not exist in German – which is clearly not true, as the German corpus data and my collection of German and Swiss German examples demonstrate. Even studying a language in which ambiguity does not exist, such as Dutch, could be rewarding. It would be interesting, for instance, to find out whether this lack of ambiguity is due to different mechanisms of marking contrast and metalinguistic negation.

Even for English and German, however, a number of issues still need to be addressed. A more detailed study comparing speech and writing would be worthwhile, but will have to be postponed until much larger spoken copora are available – unless researchers are willing to compile their own material. And despite the fairly numerous studies on prosody, the last word on the role of intonation and stress in the interpretation of *all…not* constructions has not been spoken. Unfortunately, however, the kind of data necessary for an empirical investigation on prosody cannot be expected to be available in the near future, as even today's relatively small spoken copora do not provide prosodic annotation or are too small for the present purposes. Other possible differences between English and German that have cropped up in section 5.2 concern the non-referentiality of *no*/*kein* and consequently their unsuitability as topic-expresssions, as well as the alleged preference of German for *no*-negation (cf. Weiß (1961b: 131). Although these issues are only loosely connected to *all…not* constructions, they would be interesting to investigate empirically and comparatively.

In addition, *all…not* constructions could also be studied from a diachronic point of view, but this poses even more difficulties for the analysis because one cannot even in principle test the ambiguity of the constructions with the help of native speakers. Moreover, negation has undergone substantial changes in the history of both English and German, which introduces further complications in terms of extraction and analysis. However, it would almost certainly be possible to look at the phenomenon as far back as Early Modern English since relevant examples can be found in Shakespeare and his contemporaries, and one could probably go back even further to Middle English and Middle High German, as the early versions of the *all that glitters* proverb show (cf. section 4.9). The impersonal construction I discussed in connection with that proverb could also be studied from a diachronic perspective, both in English and German and maybe other languages, such as French, which seems to have lost this alternative somewhere along its development.

To shed more light on the question why *all…not* constructions are used instead of allegedly more unmarked paraphrases with *no/ne* and *not all*, respectively would require a

systematic investigation of all the potential paraphrases for the NEG-Q and NEG-V meanings. This would also be desirable in order to do justice to the principle of accountability. Unfortunately, arriving at a satisfactory recall of all the relevant paraphrases poses serious methodological challenges. The rough count presented in section 4.9 suggested that the *not all* paraphrase is much more frequent in German than in English, which would account for the relative scarcity of NEG-Q *all…not* constructions in German. However, this claim would have to be tested in a further study.

Finally, to supplement the psycholinguistic studies on how children interpret quantifier-negation sentences, a corpus linguistic study could shed light on the question of how children actually use these structures. Some of the examples from my own collection suggest that all the findings based on the truth value judgment task methodology cannot be accurate. In particular, I found instances of clear NEG-Q meanings produced by children of a much younger age than is believed to be possible. It seems unlikely that children's ability to produce certain readings would precede the comprehension of these readings. But again, such a corpus linguistic study faces the problem that the available data are probably too small to extract the necessary number of relevant instances. In addition to complementing the psycholinguistic studies of quantifier-negation interaction with corpus linguistic methodology, one could also profitably supplement the present corpus linguistic approach by conducting psycholinguistic experiments, particularly to assess the influence of the formulaic expressions on the free production of *all…not* constructions. But how exactly this question could be answered is a matter for future research.

It is thus clear that a lot remains to be done in the area of quantifier-negation structures. This study has presented a new approach to this old topic by empirically examining the constructions with the help of large electronic corpora of real spoken and written English and written German, supplemented by my own collection of relevant examples. It shows the frequency and the different uses of *all…not* constructions in real everyday language, instead of making claims about made-up sentences or utterances out of context. Thanks to this approach, I was also able to show that some of the claims made in the previous literature are untenable. For instance, a lot of energy has been invested in research into the putative exclusive idiolects first proposed by Carden (1970a, 1973a, 1973b, 1976; cf. section 2.5). Supporting Labov's findings, I have shown that such idiolects are nonexistent, since clear examples of all three readings can be found in the corpus material, and these examples, in their particular contexts, cannot be interpreted in any other way. The approach chosen for this study thus not only offers new insights into

this particular topic, but it also demonstrates the advantages of corpus linguistics with detailed quantitative and qualitative analysis over methodologies such as introspection or interviews, even when topics are concerned that have traditionally been the province of semanticists. It is certainly worthwhile to supplement these earlier theoretical studies with an empirical and functional approach. In short, this study has furthered our understanding of *all…not* constructions – but all the work is not yet done.

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Appendix: Symbols and abbreviations

NEG-Q	wide scope negation or weak distributive reading (*not all*…); dialect of informants accepting only NEG-Q
NEG-V	narrow scope negation or strong distributive reading (*no/none*…); dialect of informants accepting only NEG-V
COLL	collective reading (*the sum of*/*all together*/*not even all*…)
UNCL	unclear
AMB	ambiguous between NEG-Q and NEG-V (and COLL); dialect of informants accepting both readings
BNC	British National Corpus
C4	Korpus C4
deWaC	German component of the WaCky corpora (Web-as-Corpus kool ynitiative)
CG	Common Ground
MN	metalinguistic negation
NLP	natural language processing
~	logical negation
¬	logical negation
∧	logical 'and'
→	material conditional ('if – then')
p > q	p implies q
≅, ≈	is equivalent to
≠	is not equivalent to
∀	universal quantifier
A, **E**, **I**, **O**	corners of the Square of Oppositions, cf. section 2.3
Q~	inner negation of a quantifier Q (the contrary of Q)
~Q	outer negation of a quantifier Q (the contradictory of Q)
p, **q**	proposition variables
gdw.	German: *genau dann, wenn* ('precisely when', 'if and only if', 'iff')
⊆	subset
⊄	no subset
\	without
`	falling accent
ˇ	fall-rise intonation
*	ungrammatical
?	marginal status
#	pragmatically anomalous